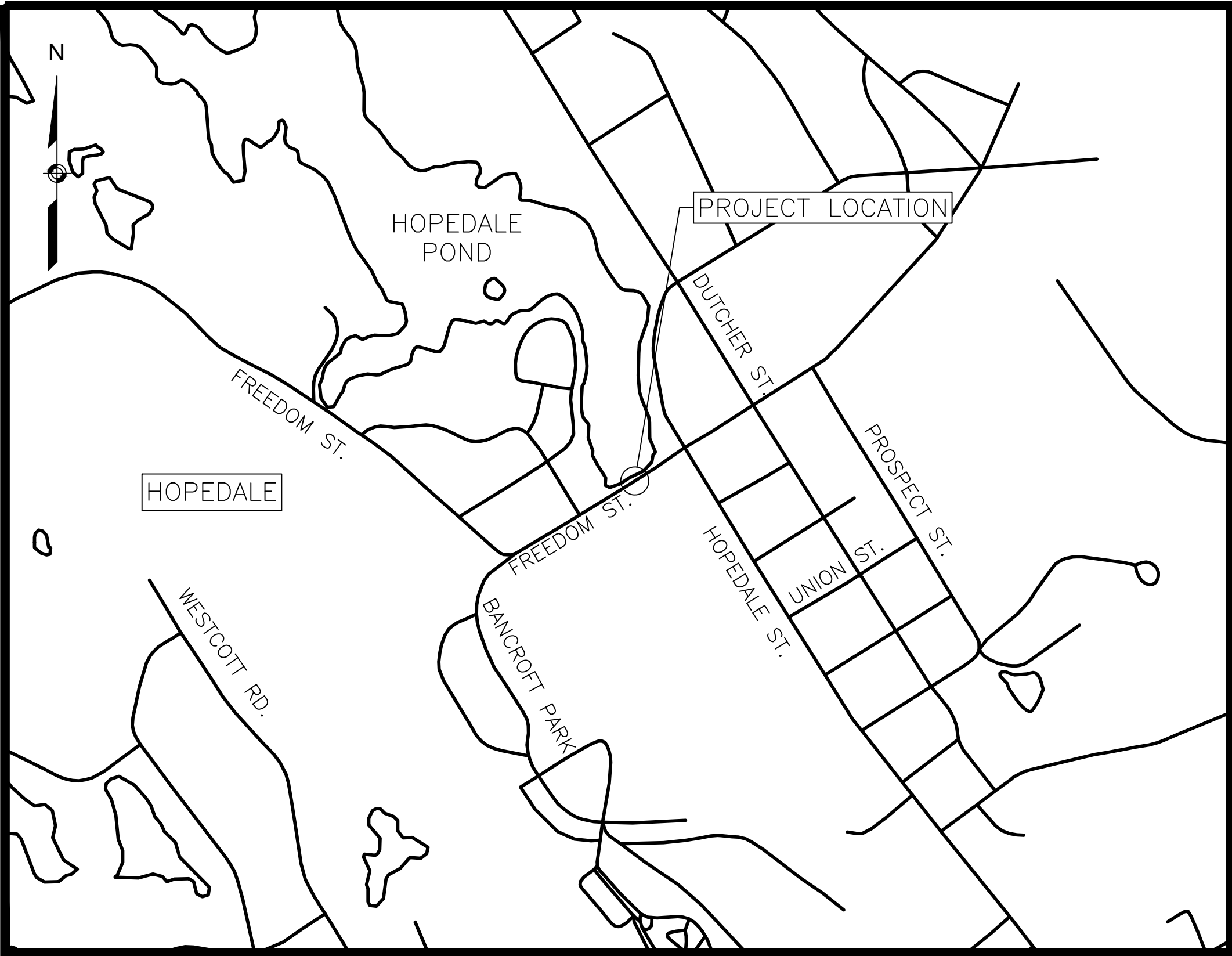


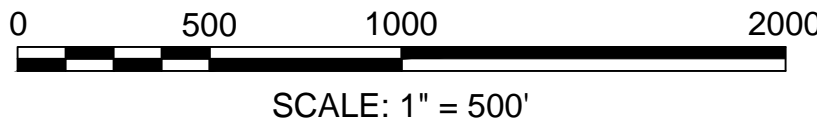
TOWN OF HOPEDALE, MASSACHUSETTS
HIGHWAY DEPARTMENT
FREEDOM STREET OVER MILL RIVER
ROADWAY AND BRIDGE REHABILITATION
JUNE 2016



THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE 2014 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS, (AS RELATED TO TRAFFIC STANDARD DETAILS ONLY), THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.



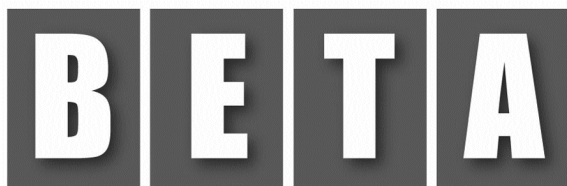
LOCATION MAP



PLAN INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	CONSTRUCTION PLAN (1 OF 2)
3	CONSTRUCTION. PLAN (2 OF 2)
4	BRIDGE GENERAL NOTES
5	BRIDGE PLAN & CROSS-SECTION
6	DEMOLITION (1 OF 2)
7	DEMOLITION (2 OF 2)
8	ABUTMENT PLAN & ELEVATION
9	SUBSTRUCTURE DETAILS
10	SIDEWALK DETAILS
11	CONCRETE REPAIR DETAILS
11	CONCRETE REPAIR DETAILS
13	DETOUR PLAN (1OF 2)
14	DETOUR PLAN (2 OF 2)

PREPARED BY:



www.BETA-Inc.com



GENERAL NOTES

1. THE LOCATION OF SUBSURFACE UTILITIES SHOWN ON THE PLANS IS APPROXIMATE AND NOT GUARANTEED TO BE COMPLETE OR ACCURATE. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, CONDITIONS AND ELEVATIONS OF EXISTING UTILITY LINES AND STRUCTURES PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR MUST NOTIFY DIG SAFE PRIOR TO ANY EXCAVATION IN PUBLIC OR PRIVATE WAYS OR UTILITY COMPANY RIGHT OF WAY OR EASEMENT. ANY UTILITY POLES AND/OR GUY POLES, OR OTHER PRIVATELY-OWNED UTILITY STRUCTURES, WITHIN AREAS AFFECTED BY THE WORK, SHALL BE REMOVED AND RESET BY THE RESPECTIVE UTILITY COMPANY.
2. YOUR ATTENTION IS SPECIFICALLY DIRECTED TO THE FACT THAT BY SUBMITTING THESE DRAWINGS, NATIONAL GRID, THE TOWN OF HOPEDALE, AND OTHER UTILITY COMPANIES UNDER NO CIRCUMSTANCES GUARANTEES THE ACCURACY OF THE LOCATIONS SHOWN ON THE DRAWINGS AND MUST BE VERIFIED IN THE FIELD BEFORE ANY DIGGING COMMENCE. AS ALWAYS, IT IS THE CONTRACTOR’S RESPONSIBILITY TO NOTIFY DIG SAFE BY CALLING 811 OR 1-888-DIG-SAFE PRIOR TO ANY EXCAVATION.
3. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CABLE TV, FIRE ALARM AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES. ALL UTILITY CASTING SHALL BE ADJUSTED TO FINISH GRADE BY THEIR RESPECTIVE OWNERS.
4. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR THE RESOLUTION OF THE CONFLICT.
5. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SANITARY STRUCTURES AS NECESSARY FOR THE CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
6. CONTRACTOR SHALL VERIFY EXISTING GRADES. IF ANY ADJUSTMENT IS REQUIRED DUE TO DIFFERENT EXISTING GRADES FOUND IN THE FIELD, THE CONTRACTOR SHALL NOTIFY AND OBTAIN THE APPROVAL OF THE ENGINEER PRIOR TO PERFORMING THE WORK.
7. DRAINAGE STRUCTURES SHALL BE RETAINED UNLESS NOTED OTHERWISE.
8. EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION, AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND SHALL BE REMOVED UPON COMPLETION OF ALL THE WORK WHEN ALL DISTURBED AREAS ARE STABILIZED, TO THE SATISFACTION OF THE ENGINEER.
9. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
10. ALL NEW GRANITE CURB SHALL BE MASSDOT TYPE VA-4 UNLESS OTHERWISE NOTED ON THE PLAN.
11. ALL CURB TIE DIMENSIONS ARE TO THE FACE OF THE CURB (GUTTER LINE) OR EDGE OF TRAVEL WAY.
12. PROPOSED SIDEWALK, WHEELCHAIR RAMPS AND WALKS SHALL BE CONSTRUCTED TO THE NEAREST SCORE LINE OR EXPANSIONS JOINT IN THE EXISTING ADJACENT WALK SURFACE AS DIRECTED BY THE ENGINEER.
13. JOINTS BETWEEN NEW HMA PAVEMENT AND SAWCUT EXISTING HMA PAVEMENT SHALL BE SEALED WITH HMA JOINT SEALANT.
14. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR’S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR’S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.
15. WHEN WORKING NEXT TO EXISTING TREES, WALLS OR FENCES, THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO DISTURB THE EXISTING WALL, TREES OR FENCE. IF THE CONTRACTOR DAMAGES EXISTING TREES, WALLS OR FENCES AS A RESULT OF THE CONSTRUCTION PROCESS, IT SHALL BE HIS/HER RESPONSIBILITY (THE CONTRACTOR) TO REPAIR ALL DAMAGES AS DIRECTED BY THE ENGINEER. ALL WORK ASSOCIATED WITH THE REPAIR OR REPLACEMENT OF EXISTING TREES, WALLS OR FENCES SHALL BE PERFORMED BY THE CONTRACTOR AT HIS/HER OWN EXPENSE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED THEREFORE.
16. FIELD SURVEY WAS PERFORMED BY LIGHTHOUSE LAND SURVEYING, LLC DATED MARCH 2016. THE COORDINATES, IN FEET, ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD 83). THE VERTICAL DATUM IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

WHEELCHAIR RAMP NOTES

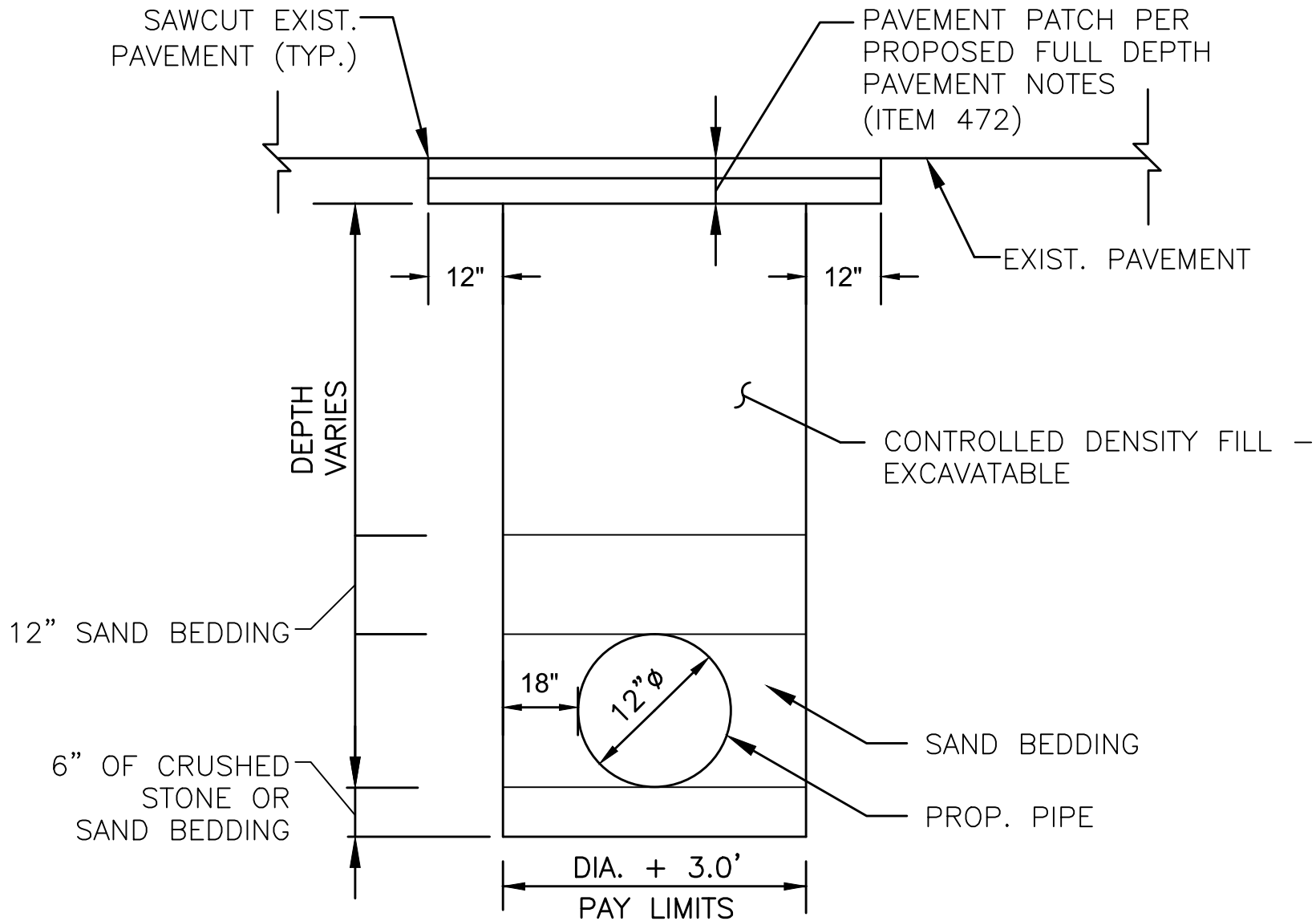
1. ALL WHEELCHAIR RAMPS SHALL CONFORM TO THE REQUIREMENTS OF THE ARCHITECTURAL ACCESS BOARD (A.A.B), THE AMERICANS WITH DISABILITIES ACT (A.D.A.). AND THE LATEST MASSDOT WHEELCHAIR RAMP STANDARDS.
2. ALL PROPOSED CURB FOR WHEELCHAIR RAMP TRANSITIONS SHALL BE CUT AND TRANSITIONED AS NECESSARY TO PROVIDE THE CORRECT TRANSITION LENGTHS FOR EACH WHEELCHAIR RAMP, AS SHOWN ON WHEELCHAIR RAMP DETAILS OR AS DIRECTED BY THE ENGINEER. ANY EXISTING CURB INLETS, IN AREAS OF NEW WHEELCHAIR RAMP TRANSITIONS, SHALL BE REMOVED AND REPLACED WITH APPROPRIATE TRANSITION CURB, AS DIRECTED BY THE ENGINEER.
3. IN NO CASE, EXCEPT MAXIMUM LENGTH HIGH SIDE TRANSITIONS, SHALL ANY TRANSITION SLOPE OF ANY WHEELCHAIR RAMP EXCEED 7.5%.
4. IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET, IS WITHIN THE ACTUAL WHEELCHAIR RAMP PATH OR TRANSITION, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OF THE STRUCTURE COVER SHALL BE FLUSH WITH THE RAMP OR TRANSITION SURFACE AND SHALL MATCH THE SLOPE OF THE NEW WHEELCHAIR RAMP EXACTLY, AS DIRECTED BY THE ENGINEER.
5. THE LOCATION OF PROPOSED WHEELCHAIR RAMPS ARE SHOWN ON THE CONSTRUCTION PLANS AND THE WHEELCHAIR RAMP DETAILS. EXACT LOCATIONS MAY BE ADJUSTED, IF NECESSARY, BY THE ENGINEER IN THE FIELD.
6. DETECTABLE WARNING PANELS SHALL BE INSTALLED ON ALL WHEELCHAIR RAMPS IN ACCORDANCE WITH 2014 CONSTRUCTION STANDARD E 107.6.5. COLOR SHALL BE BRICK RED.
7. PROPOSED WHEELCHAIR RAMP SLOPES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO THE POURING OF CONCRETE, AND ADJUSTED, IF NECESSARY, TO CONFORM TO THE LATEST STANDARDS, AS DIRECTED BY THE ENGINEER.

PAVEMENT MILLING AND OVERLAY

- SURFACE COURSE: 1" HOT MIX ASPHALT PAVEMENT (HMA)
TOP COURSE MATERIAL PLACED IN ONE LAYER OVER
- PAVEMENT MILLING: 1" PAVEMENT MILLING

CEMENT CONCRETE SIDEWALKS, WALK AND WHEELCHAIR RAMPS

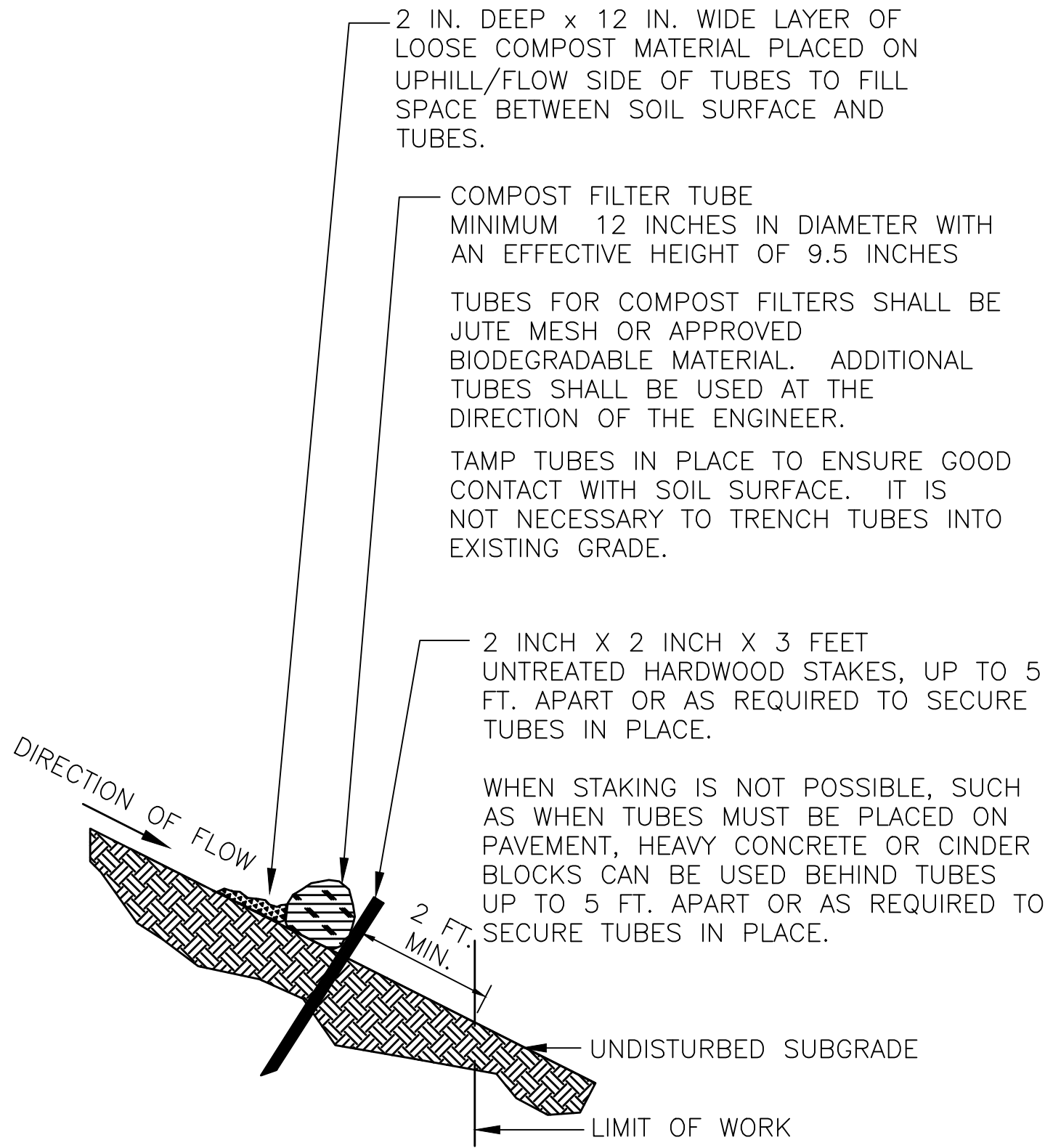
- SURFACE: 4" CEMENT CONCRETE WALK SURFACE
4000 PSI, 3/4", 610 OVER
- FOUNDATION: 8" GRAVEL BORROW, TYPE b



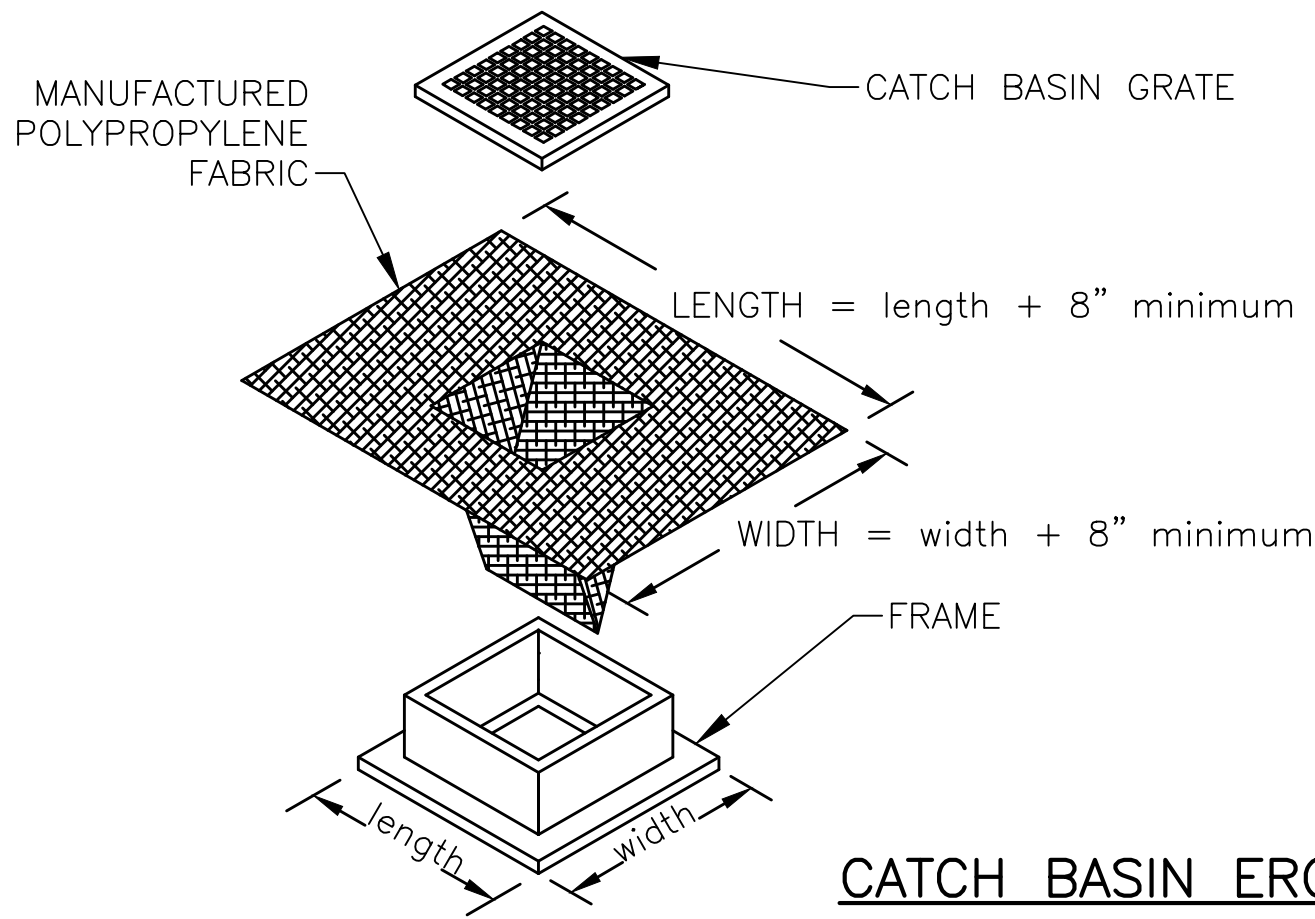
DETAIL FOR PERMANENT PATCH IN
MILL AREAS
NOT TO SCALE

FILTER TUBE GENERAL NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER’S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.

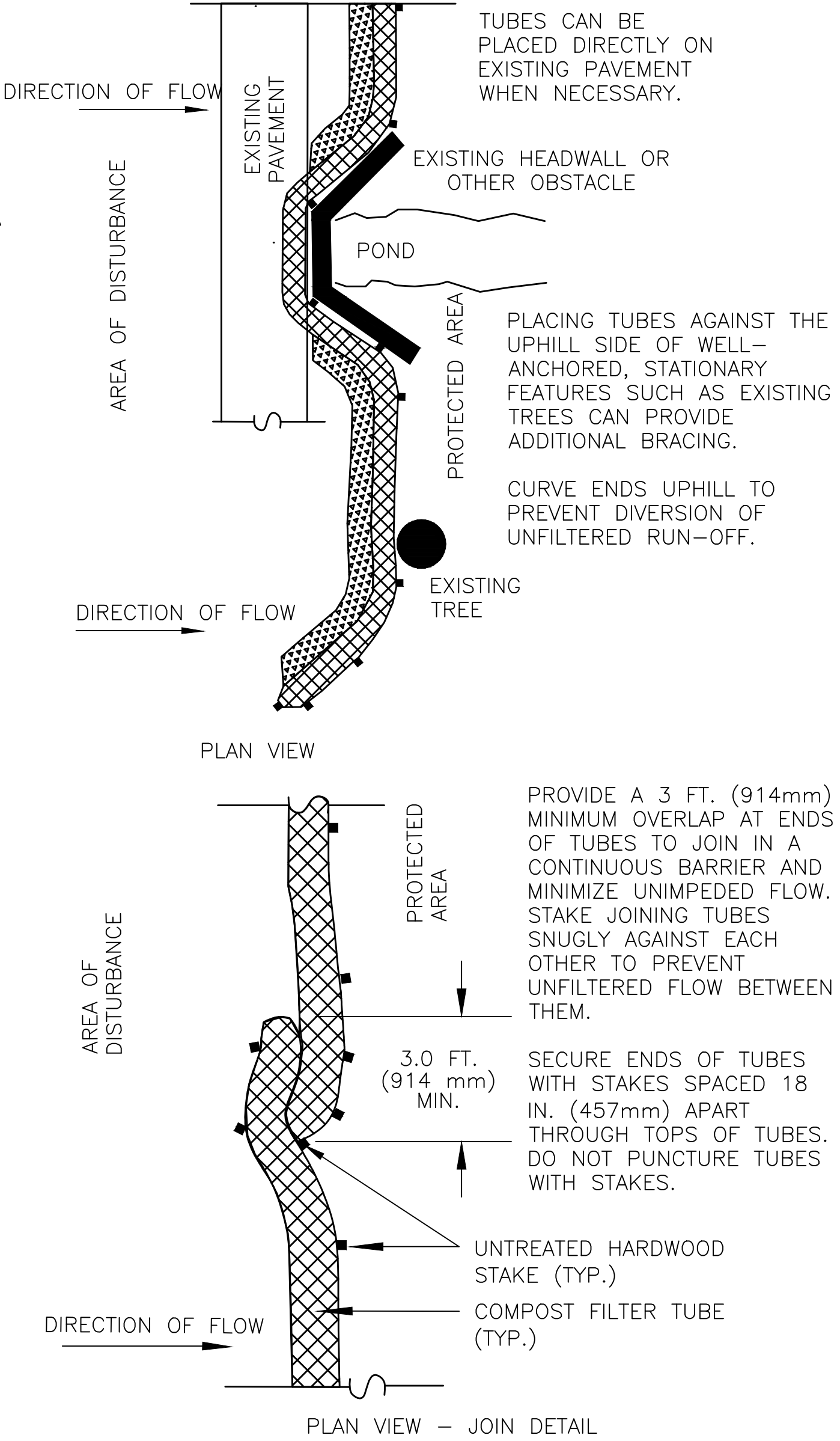


SINGLE COMPOST FILTER TUBE DETAIL
FOR EROSION CONTROL
NOT TO SCALE



NOTES:

1. LENGTH AND WIDTH OF POLYPROPYLENE FABRIC MUST EXCEED EXISTING CATCH BASIN FRAME DIMENSIONS BY A MINIMUM OF 8".
2. REMOVE CATCH BASIN GRATE AND INSTALL POLYPROPYLENE FABRIC OVER CATCH BASIN FRAME. REPLACE CATCH BASIN GRATE TO SECURE POLYPROPYLENE FABRIC IN PLACE.

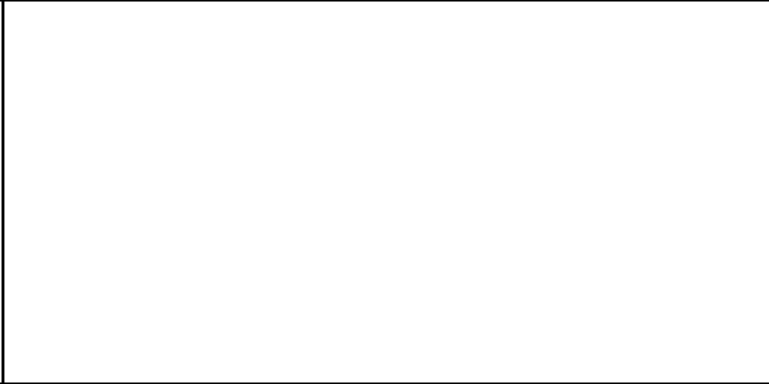
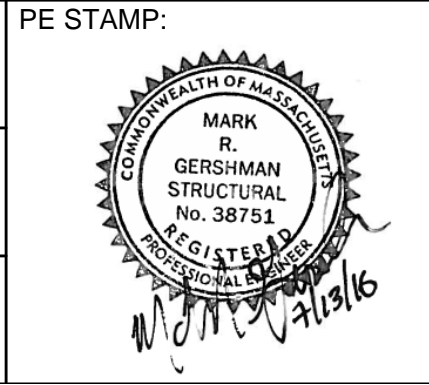


CATCH BASIN EROSION
CONTROL PROTECTION (TYP.)
NOT TO SCALE

O:\5205\5275 - HOPEDALE - FREEDOM ST\DRAWING FILES\PLAN SET\5275 CONST.DWG

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REVISIONS				

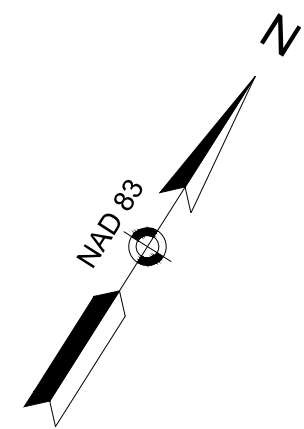
DRAWN BY:	SD
DESIGNED BY:	SD
CHECKED BY:	DJ



SCALE:
20 0 20 40
SCALE IN FEET: 1"=20'

FREEDOM STREET OVER MILL RIVER CONSTRUCTION PLAN (1 OF 2) HOPEDALE, MASSACHUSETTS	
BETA JOB No. 5275	
PLOT DATE: 7/12/2016 2:33 PM	
ISSUE DATE: 3/28/2016 11:23 AM	
SHEET No. 2 OF 14	
File: 5275 CONST.dwg	

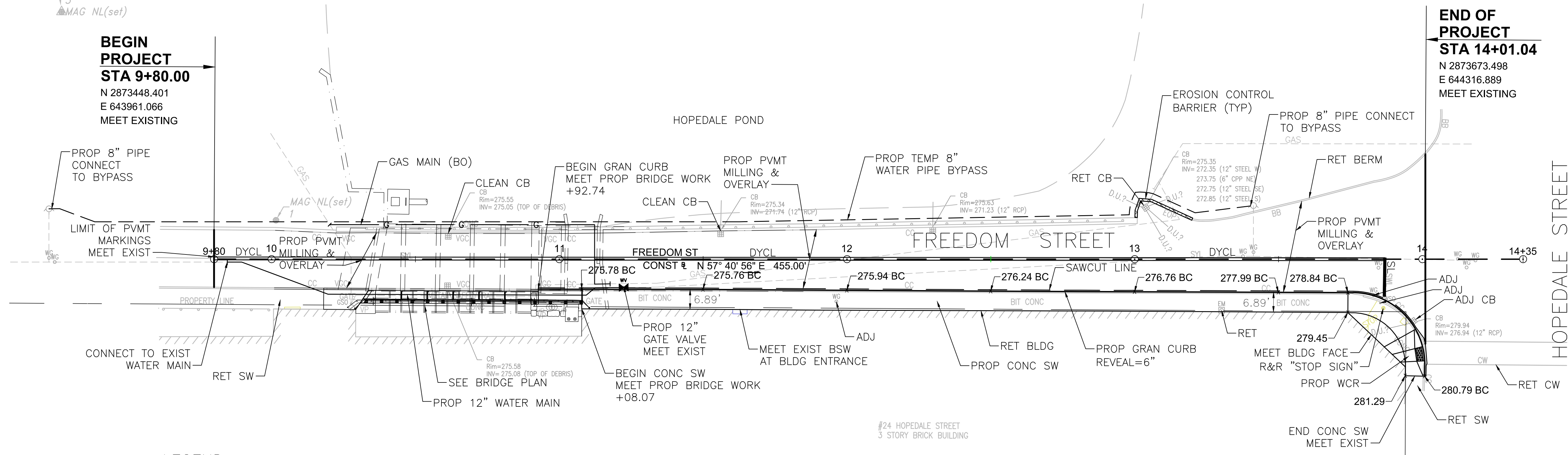
0:\520\516275 - HOPEDALE - FREEDOM ST.DRAWING FILES\PLAN SET\16275 CONST.DWG



GPS PT: 5003
N:2873525.036 (NAD83)
E:643880.617 (NAD83)
ELEV: 276.414 (NAVD88)

3
MAG NL(set)

BEGIN PROJECT
STA 9+80.00
N 2873448.401
E 643961.066
MEET EXISTING



GPS PT: 5002
N:2873725.174 (NAD83)
E:644447.766 (NAD83)
ELEV: 288.850 (NAVD88)

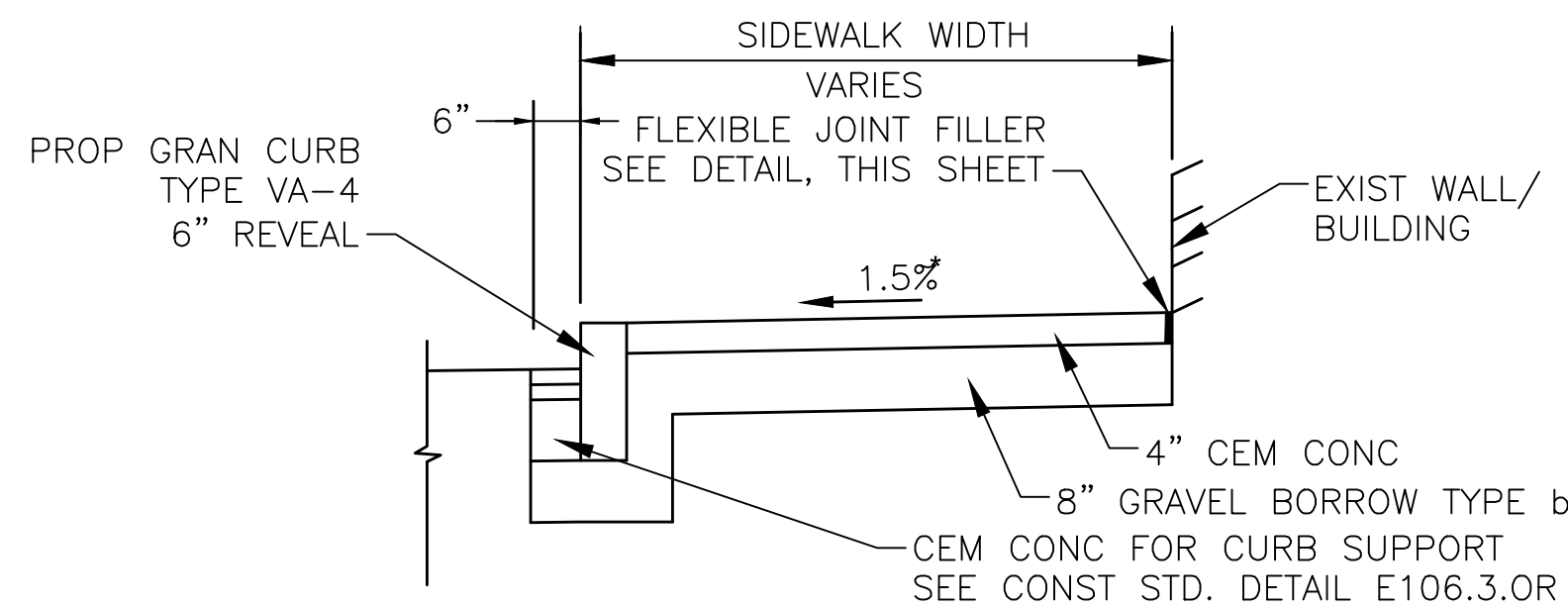
2
MAG NL(set)

LEGEND

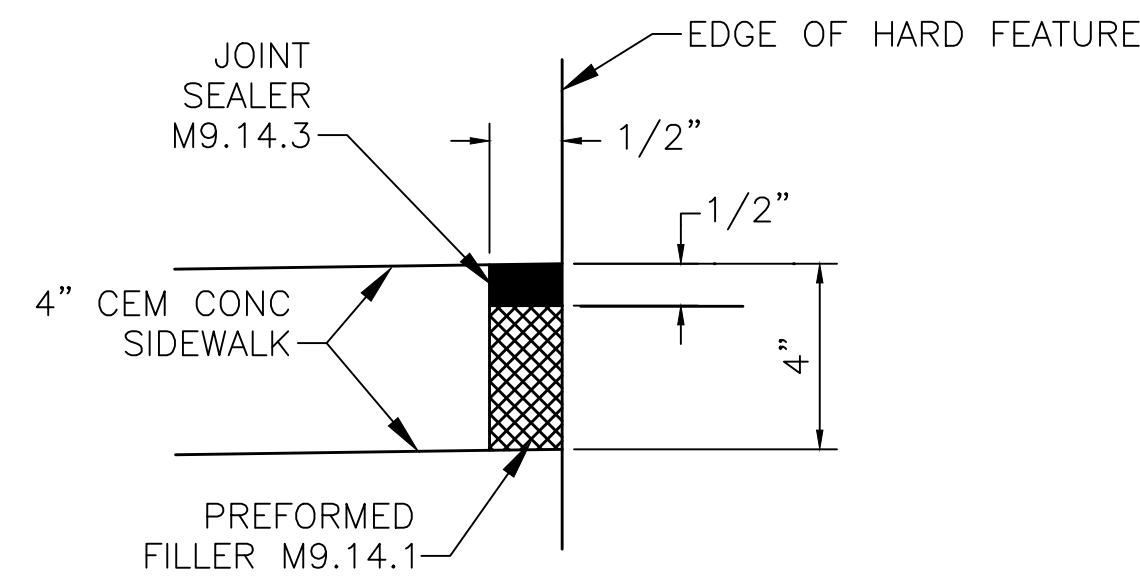
- | | | | |
|-------|--------------------------|-------|-----------------------|
| ■ CB | CATCH BASIN - SQUARE | ○ WG | WATER GATE |
| □ DWP | DETECTABLE WARNING PLATE | ○ WSO | WATER SHUT OFF |
| ⊙ | DRAIN MANHOLE | EM | ELECTRIC METER |
| ○ GSO | GAS SHUTOFF | D.U.? | DESTINATION UNKNOWN |
| ⊙ | FIRE HYDRANT | CC | CONCRETE CURB |
| ○ MAG | MAG NAIL | BB | BITUMINOUS BERM |
| △ | TRAVERSE POINT | VGC | VERTICAL GRANITE CURB |
| ○ | SIGN | VP | VENT PIPE |

CONSTRUCTION PLAN

SCALE: 1" = 20'

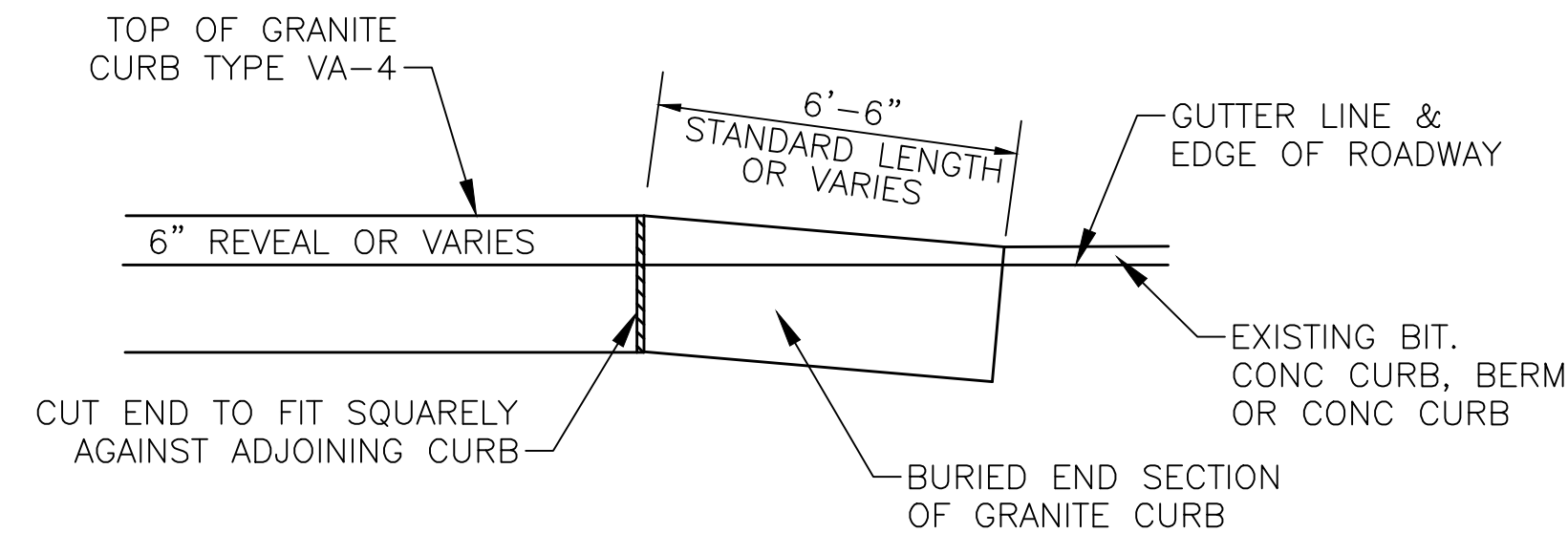


DETAIL FOR SIDEWALK AT EXISTING WALL/BUILDING
NOT TO SCALE

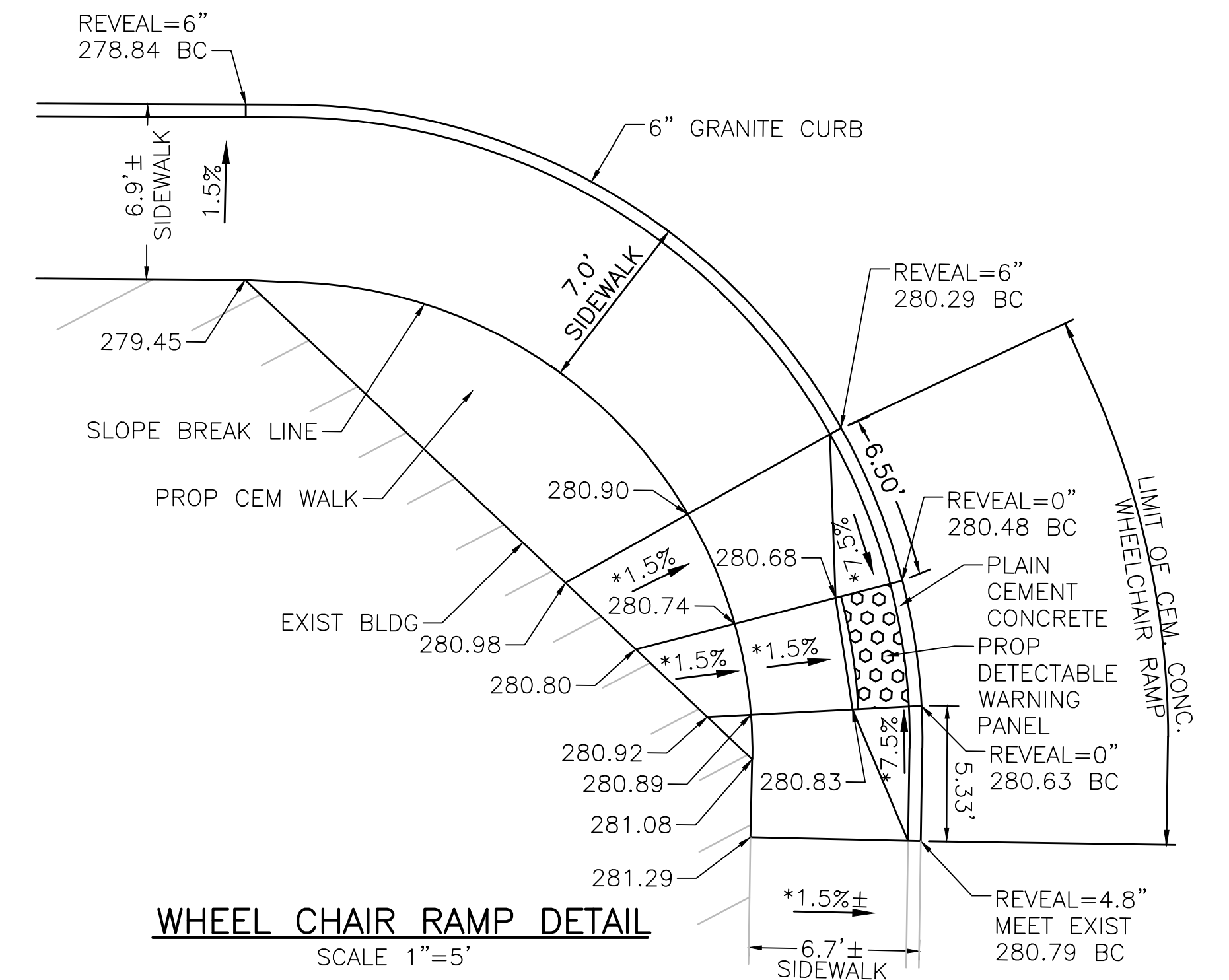


DETAIL FOR FLEXIBLE JOINT FILLER IN SIDEWALK
NOT TO SCALE

* TOLERANCE FOR CONSTRUCTION ±0.5"



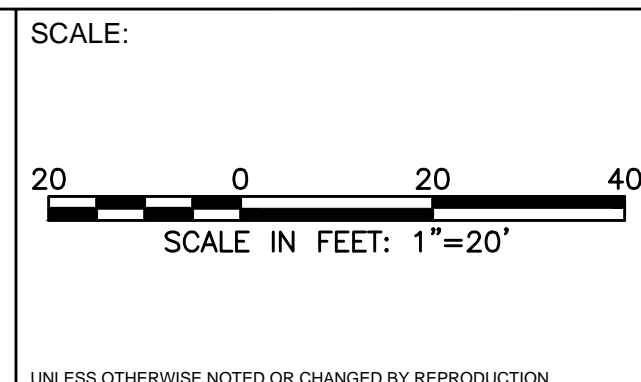
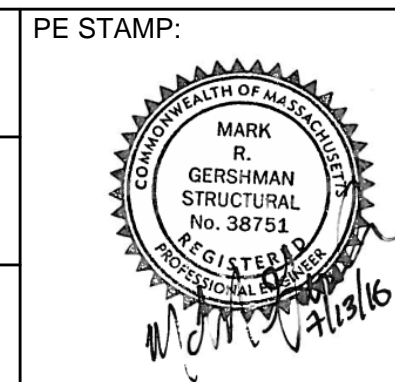
DETAIL FOR TRANSITION CURB
TRANSITION CURB - PROP CURB TO EXISTING CURB
NOT TO SCALE



WHEEL CHAIR RAMP DETAIL
SCALE 1"=5'

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DESIGNED BY:	SD
CHECKED BY:	DJ



FREEDOM STREET OVER MILL RIVER CONSTRUCTION. PLAN (2 OF 2) HOPEDALE, MASSACHUSETTS	
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BETA JOB No.	5275
PLOT DATE:	7/12/2016 2:34 PM
ISSUE DATE	3/28/2016 11:23 AM
SHEET No.	3 OF 14
File:	5275 CONST.dwg

Q:\5205\5275- HOPEDALE- FREEDOM STREET\DRAWING FILES\STRUCTURAL--FINAL DESIGN--GENERAL NOTES\SHEET_GENERALNOTES.DWG

BRIDGE GENERAL NOTES

DESIGN:

IN ACCORDANCE WITH THE 2014 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS WITH CURRENT INTERIM SPECIFICATIONS THROUGH 2015 FOR HL-93 LOADING.

MASSDOT BENCH MARK:

PRD#1	N = 2873471.34	PRD #2	N = 2873725.17
MDISC #1	E = 643972.03	MDISC #2	E = 644447.77
	ELEV. = 275.49		ELEV. = 288.85
PRD#3	N = 2873525.04		
MDISC #3	E = 643880.62		
	ELEV. = 276.41		

ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

SURVEY:

SURVEY PERFORMED BY LIGHTHOUSE LAND SURVEYING, LLC IN MARCH OF 2016. THE COORDINATES, IN FEET, ARE BASED UPON THE MASS. STATE PLANE COORD. SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD 83). ELEVATIONS, IN FEET, ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

FOUNDATIONS:

FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.

UNSUITABLE MATERIAL:

ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

REINFORCEMENT:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION	CONDITION	#4 BARS	#5 BARS
1.	NONE	21"	26"
2.	12" OF CONCRETE BELOW BAR	29"	36"
3.	COATED BARS, COVER < 3db, OR CLEAR SPACING < 6db	31"	39"
4.	COATED BARS, ALL OTHER CASES	25"	31"
5.	CONDITION 2. AND 3.	35"	44"
6.	CONDITION 2. AND 4.	34"	43"

IF THE ABOVE BARS ARE SPACED 6" OR MORE ON CENTER, THE LAP LENGTH SHALL BE 80% OF THE LAP LENGTH GIVEN ABOVE. ALL OTHER BARS SHALL BE LAPPED AS SHOWN IN THE CONSTRUCTION DRAWINGS.

CONCRETE SCHEDULE:

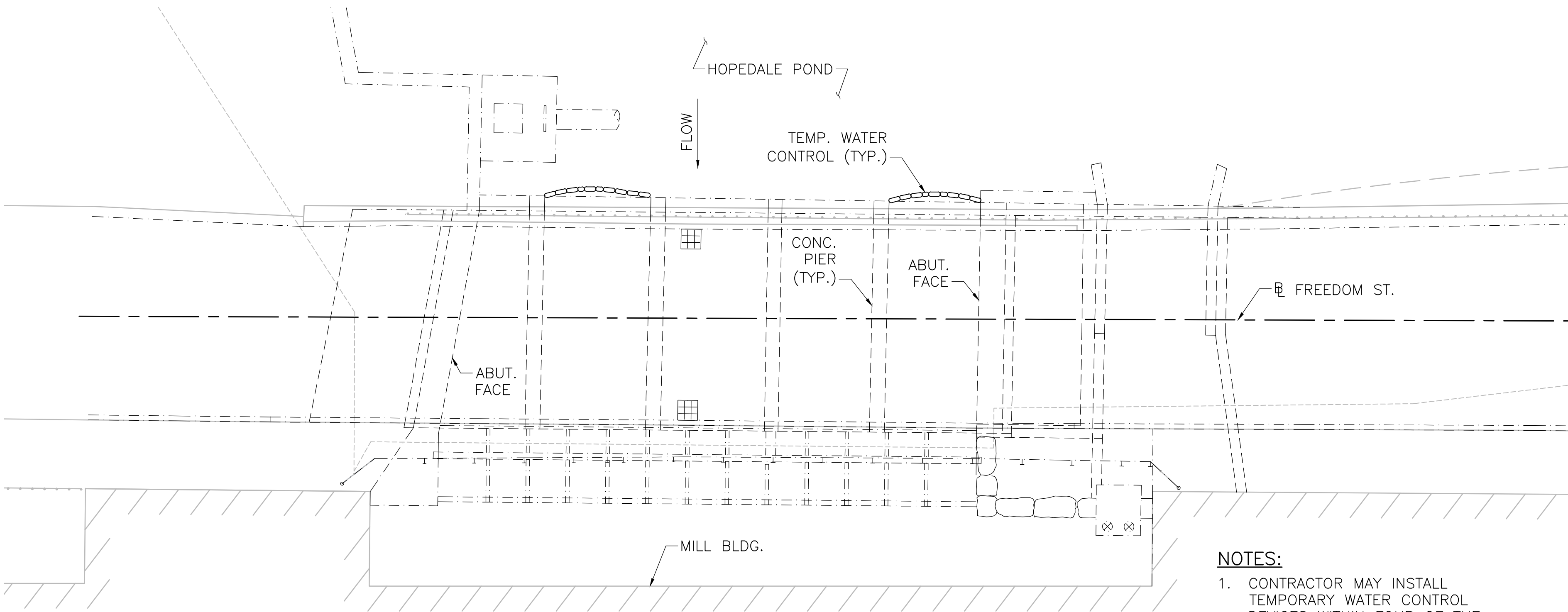
CONCRETE TYPE	APPLICATION
4000 PSI, ¾ IN., 660 CEMENT CONCRETE	CONCRETE REPAIRS
4000 PSI, 1½ IN., 565 CEMENT CONCRETE	ABUTMENT CAPS, REVETMENT DETAIL, SOUTHEAST SIDEWALK SLAB (1ST POUR)
5000 PSI, ¾ IN., 685 HP CEMENT CONCRETE (2ND POUR)	SIDEWALK SLAB, BEAM, SOUTHEAST SIDEWALK SLAB

SCALES:

SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR ¼ SIZE PRINT (12"X18").

EXISTING CONDITIONS:

CONTRACTOR TO VERIFY EXISTING GRADES. IF ANY ADJUSTMENT IS REQUIRED DUE TO DIFFERENT EXISTING GRADES FOUND IN THE FIELD, THE CONTRACTOR SHALL NOTIFY AND SEEK THE APPROVAL OF THE ENGINEER PRIOR TO PERFORMING THE WORK.



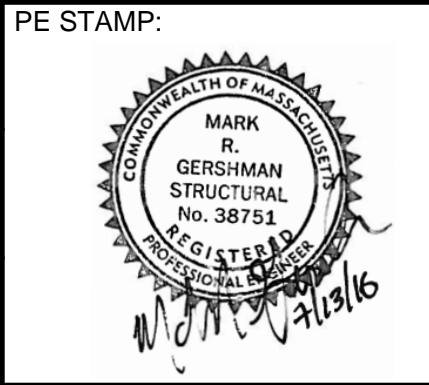
WATER CONTROL PLAN
SCALE: 1/8"=1'-0"

NOTES:

1. CONTRACTOR MAY INSTALL TEMPORARY WATER CONTROL DEVICES WITHIN FOUR OF THE FIVE BAYS OF THE FREEDOM STREET BRIDGE.
2. CONTRACTOR SHALL SUBMIT A WATER CONTROL PLAN AND SEQUENCE OF CONSTRUCTION TO THE ENGINEER AND HOPEDALE CONSERVATION COMMISSION FOR APPROVAL.

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REVISIONS				

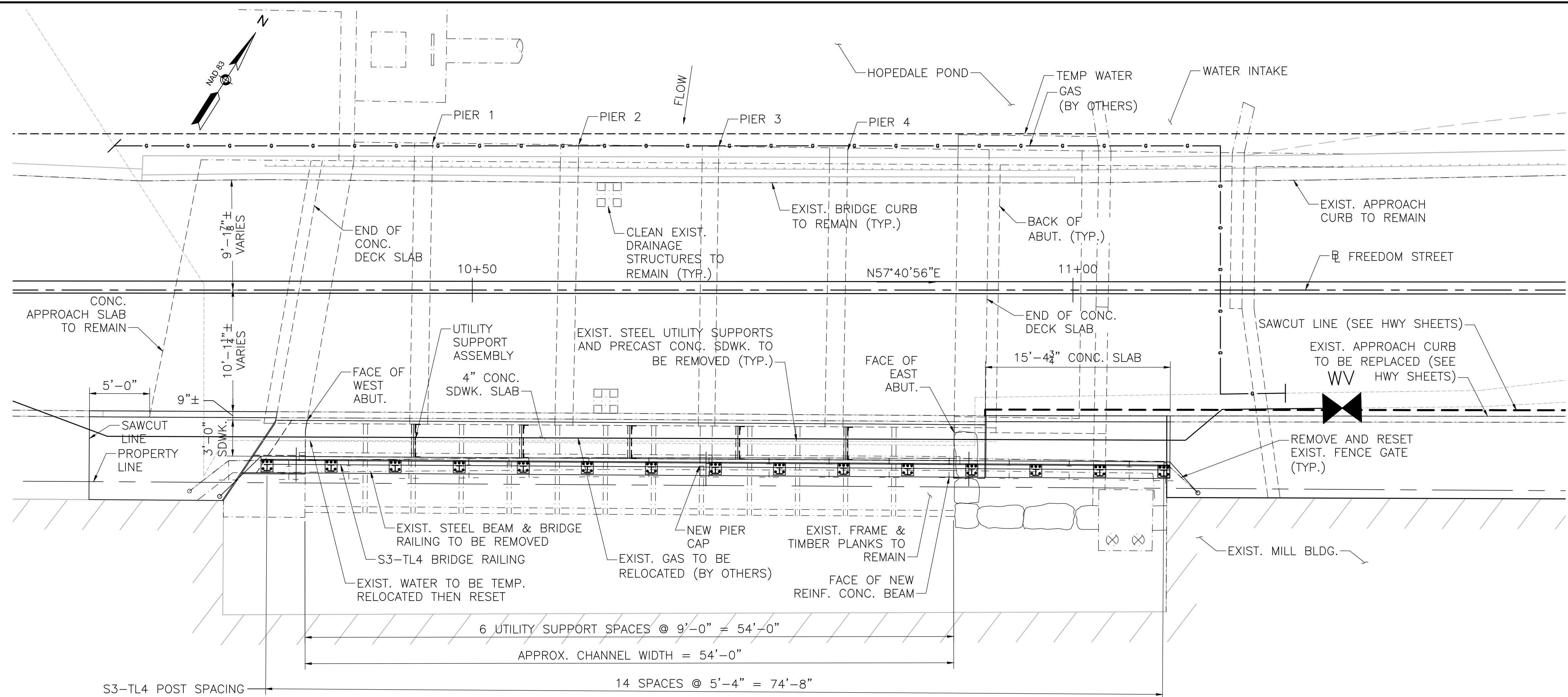
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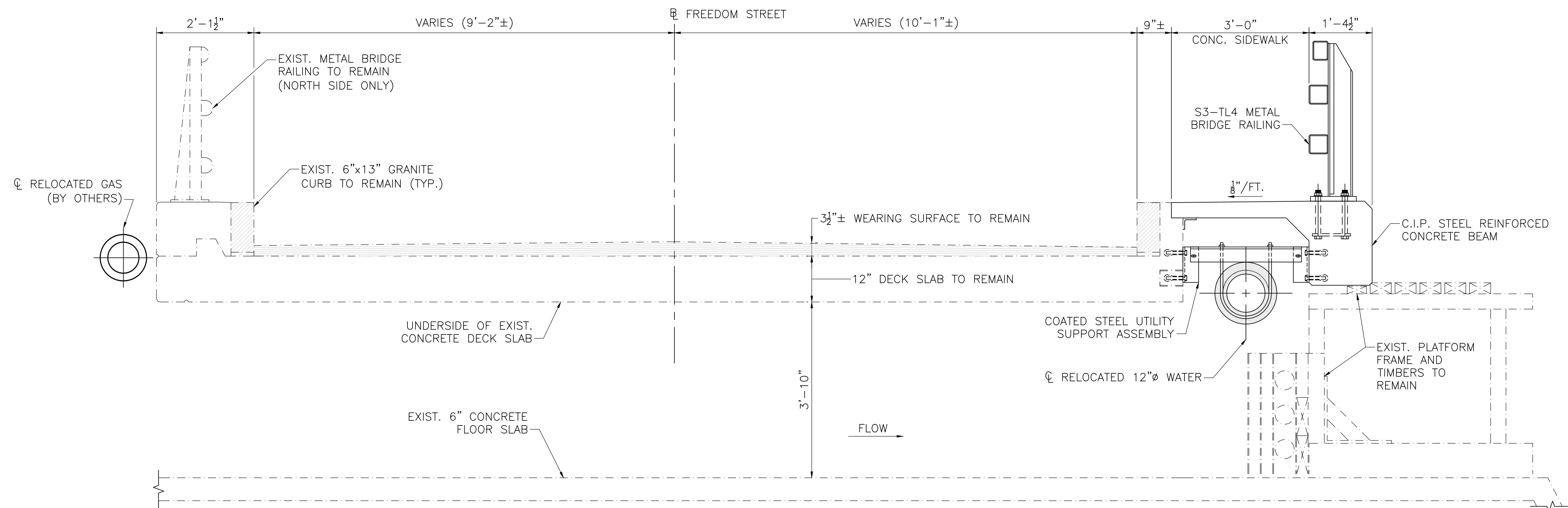
SCALE:
NONE
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

FREEDOM STREET
OVER MILL RIVER
BRIDGE GENERAL NOTES
HOPEDALE, MASSACHUSETTS

BETA JOB No.	5275
PLOT DATE:	7/12/2016 2:34 PM
ISSUE DATE	3/31/2016 11:34 AM
SHEET No.	4 OF 14
File:	Sheet_GeneralNotes.dwg



BRIDGE GENERAL PLAN
SCALE: $\frac{1}{16}$ " = 1'-0"

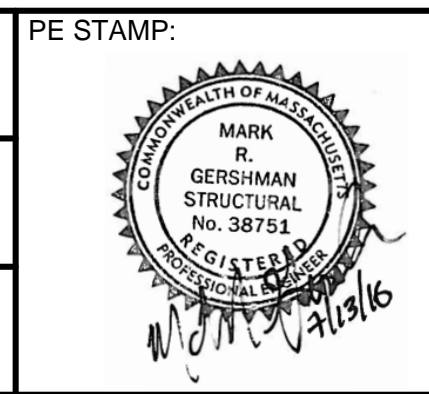


BRIDGE CROSS-SECTION
SCALE: $\frac{3}{4}$ " = 1'-0"

Q:\5205\5275 - HOPEDALE - FREEDOM STREET\DRAWING FILES\STRUCTURAL - FINAL DESIGN - PLAN AND ELEVATIONS\SHEET - PLAN & ELEVATION.DWG

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DESIGNED BY:
CHECKED BY:

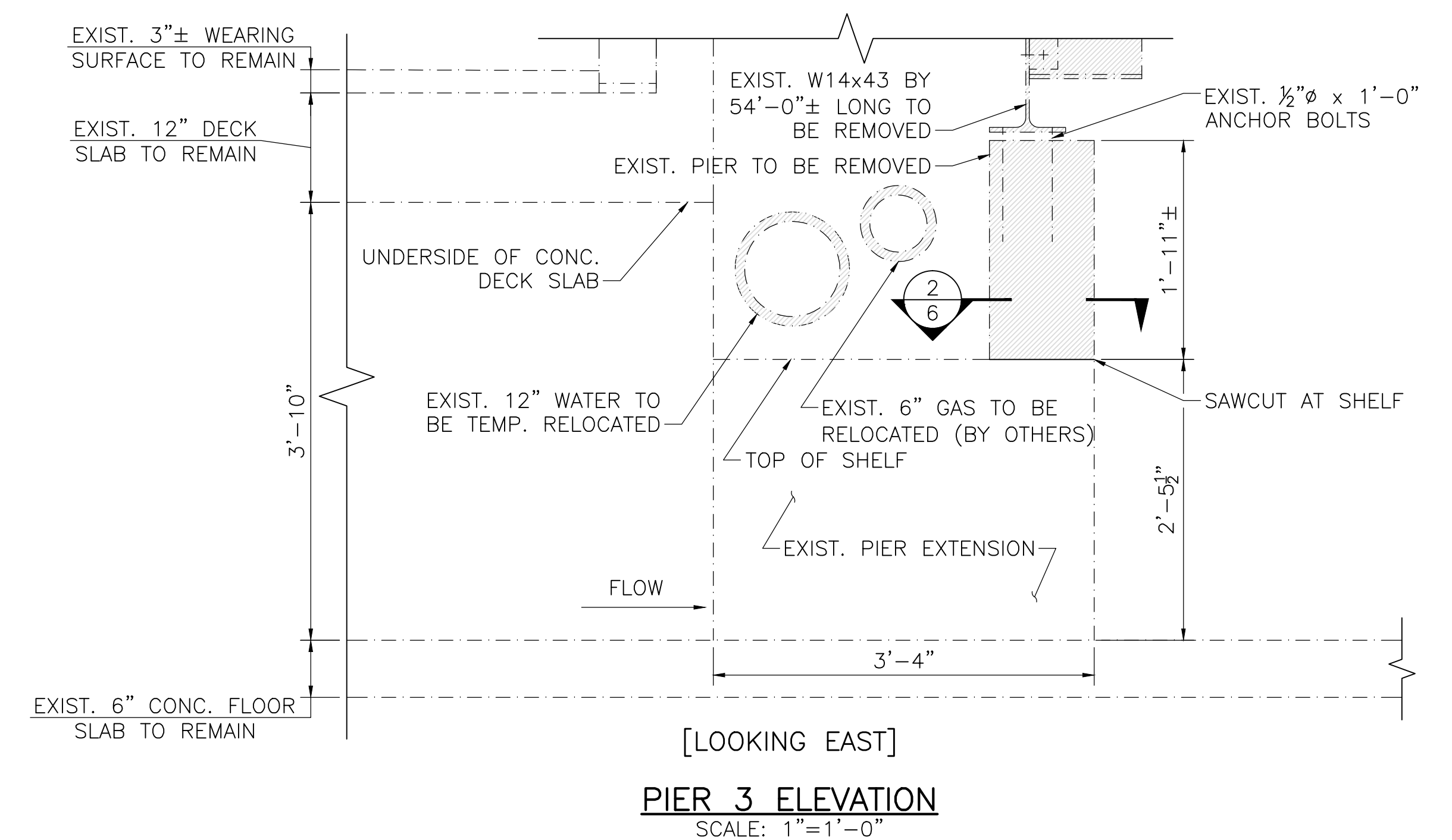
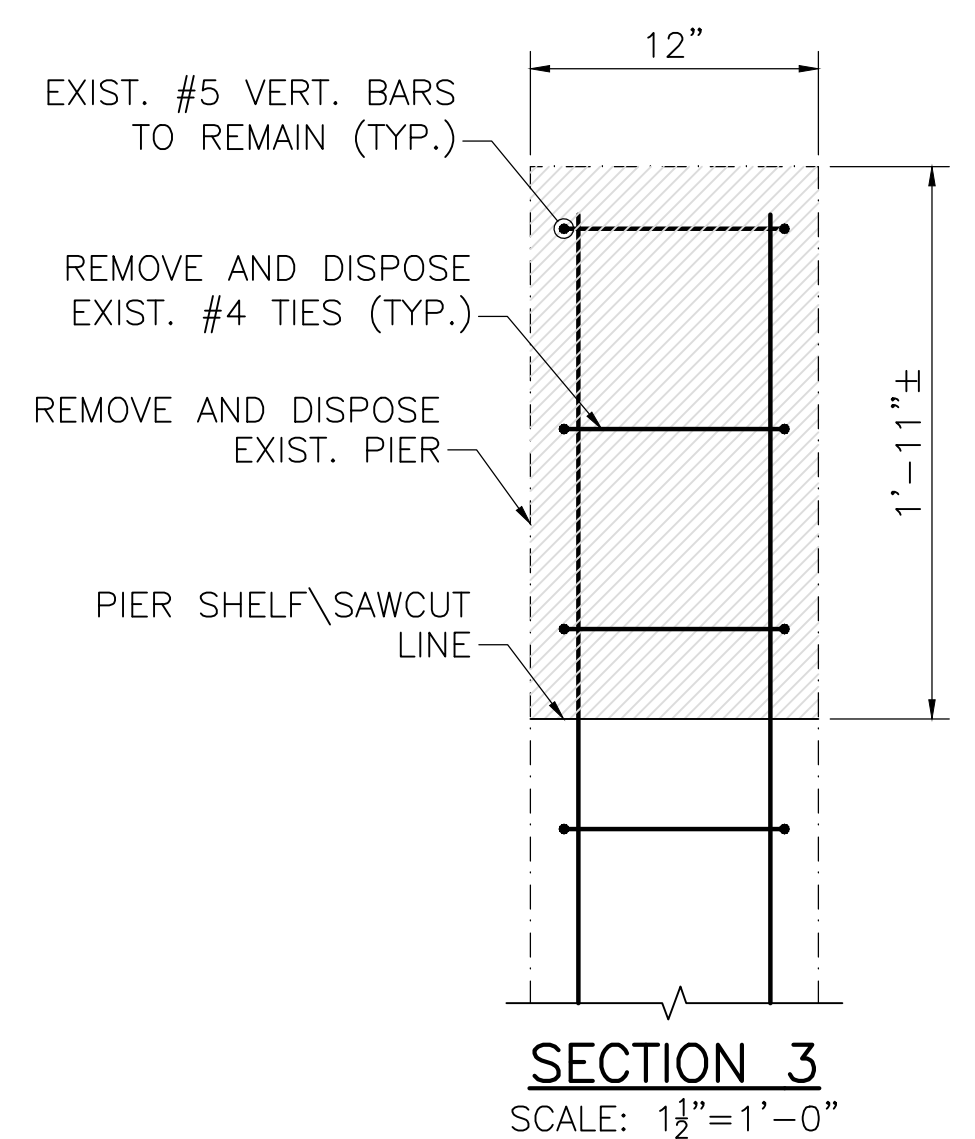
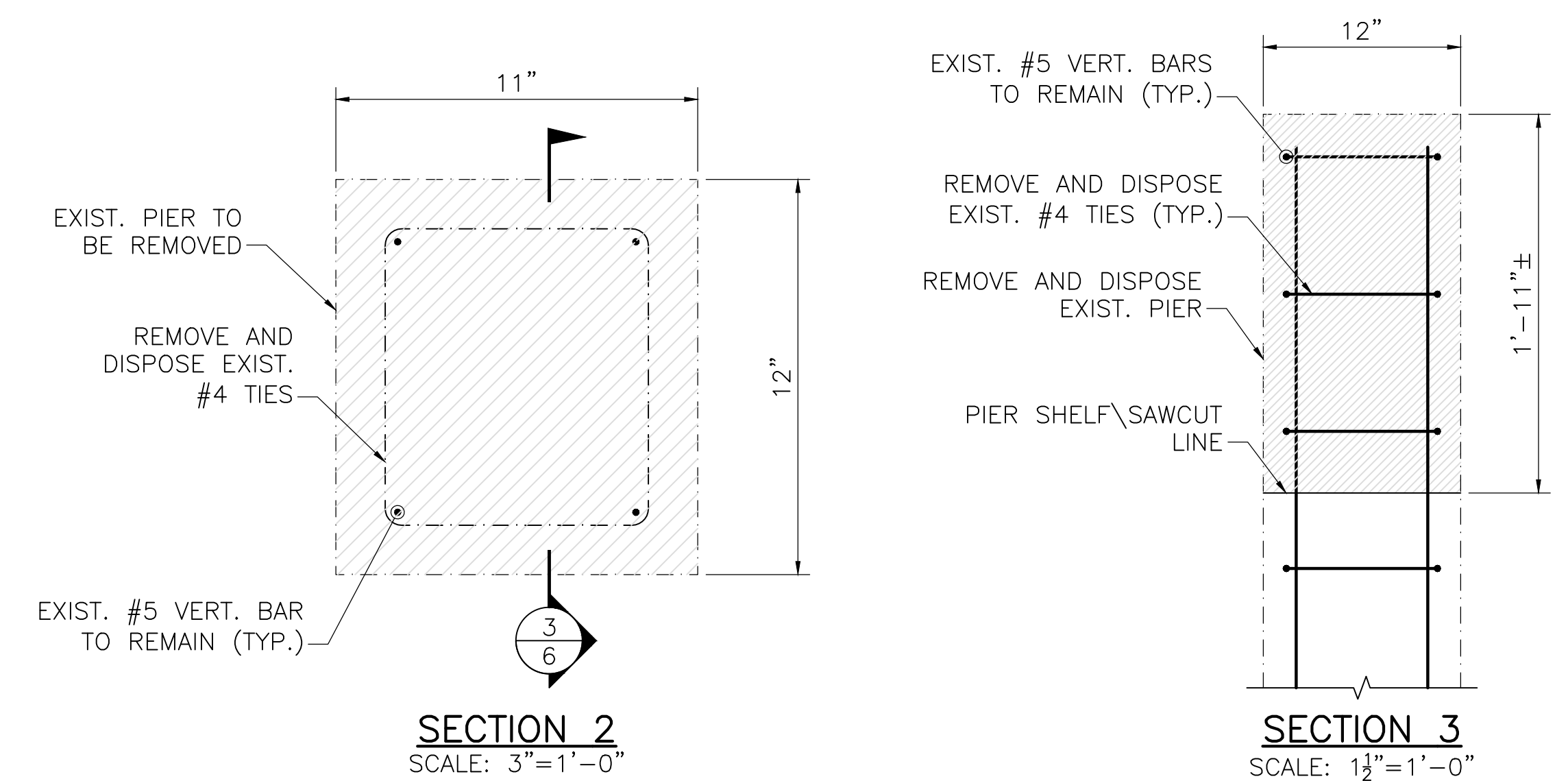
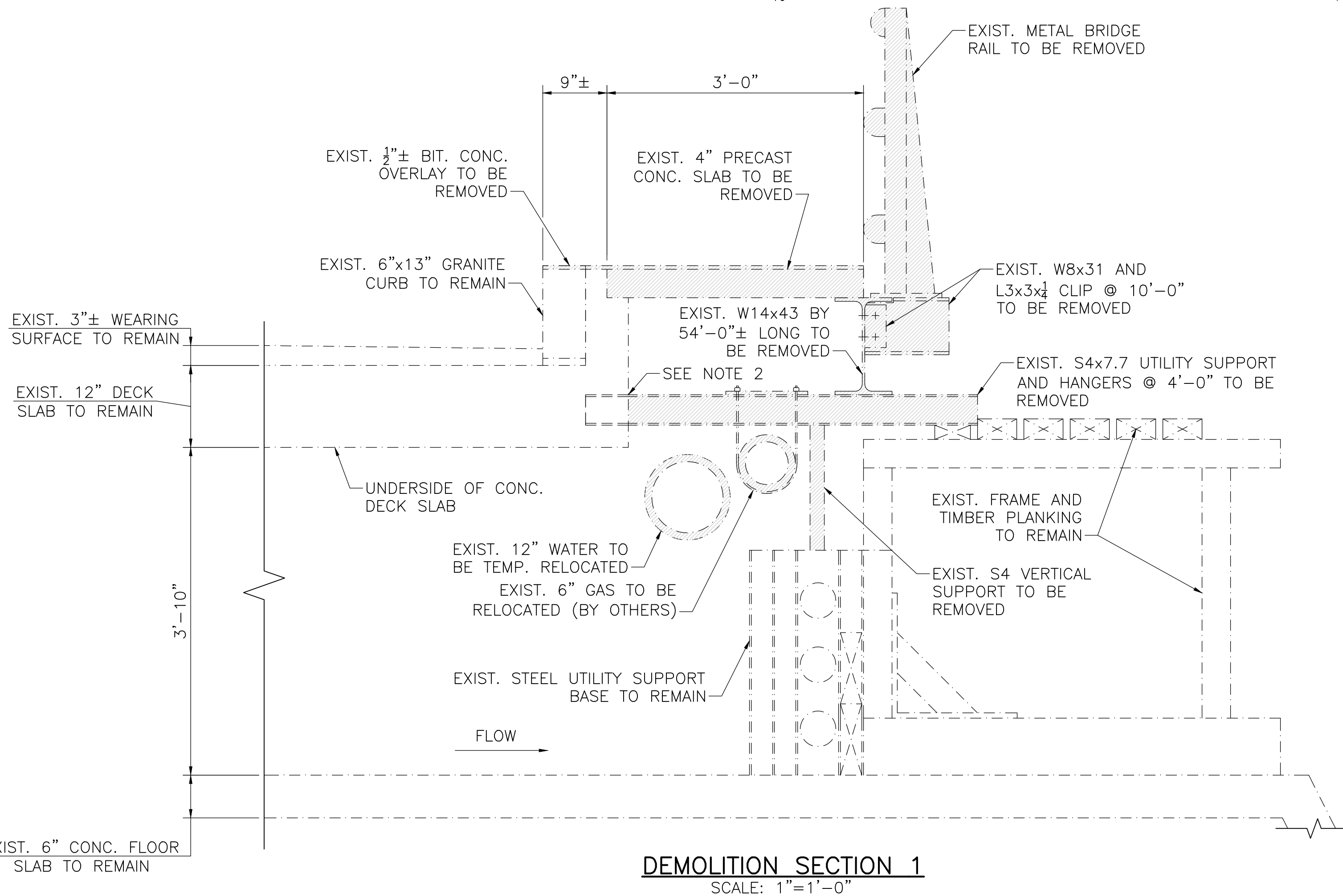
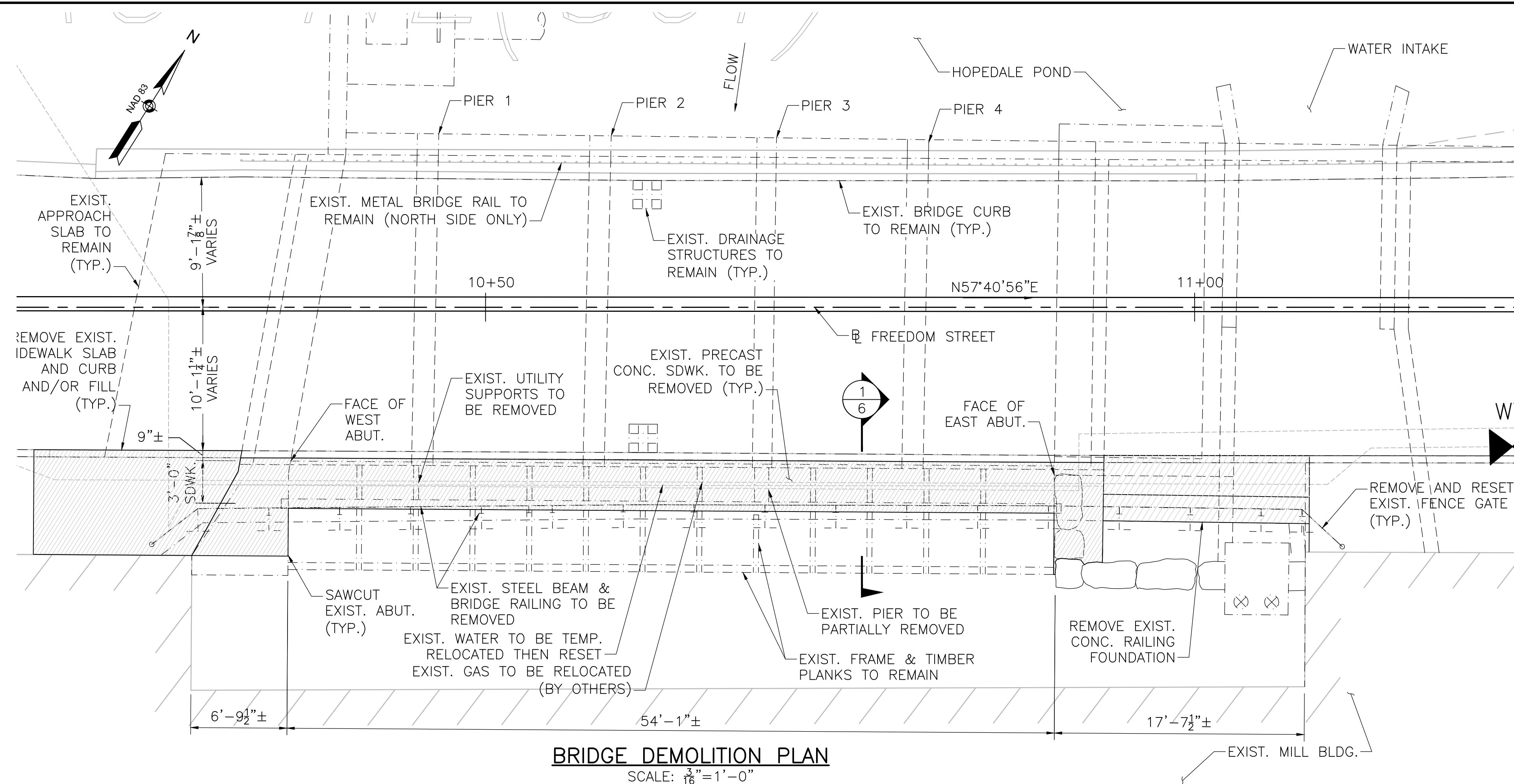



PREPARED BY:

SCALE:
AS SHOWN

**FREEDOM STREET
OVER MILL RIVER
BRIDGE PLAN & CROSS-SECTION
HOPEDALE, MASSACHUSETTS**

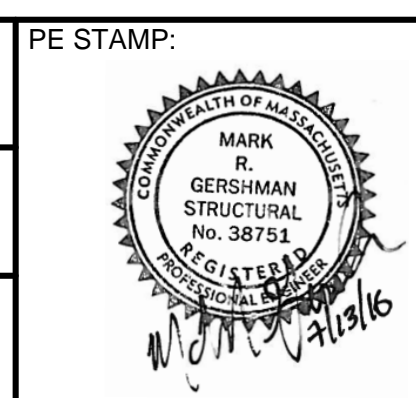
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ISSUE DATE	3/31/2016 11:38 AM
SHEET No.	5 OF 14
File:	Sheet_Plan&Elevation.dwg



- NOTES:**
1.  SHADED AREAS DENOTE AREAS OF DEMOLITION.
 2. CUT UTILITY SUPPORT FLUSH, BURN BACK AND FILL VOID WITH NON-SHRINK GROUT. IF CONCRETE SURROUNDING S4 IS HEAVILY DETERIORATED, REPAIR AREA IN ACCORDANCE WITH CONCRETE REPAIR DETAILS ON SHEET 11 ONCE DEMOLITION IS COMPLETE.
 3. ABUTMENT AND WALL CONFIGURATION AND LOCATIONS ARE ESTIMATED AND FOR CONCEPTUAL PURPOSES ONLY. DETAILS ARE GENERAL IN NATURE. CONTRACTOR TO CONFIRM SITE CONDITIONS. IF CONDITIONS VARY FROM WHAT IS SHOWN ON THESE DRAWING, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE COMMENCING WORK.

D:\5200S\5275 - HOPEDALE - FREEDOM STD\DRAWING FILES\STRUCTURAL\~~FINAL DESIGN~~\DEMO PLANS AND SECTIONS\SHEET_DEMO.DWG[illegible]

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DESIGNED BY:	
CHECKED BY:	



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SCALE:

AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

**FREEDOM STREET
OVER MILL RIVER
DEMOLITION (1 OF 2)
HOPEDALE, MASSACHUSETTS**

BETA JOB No. 5275

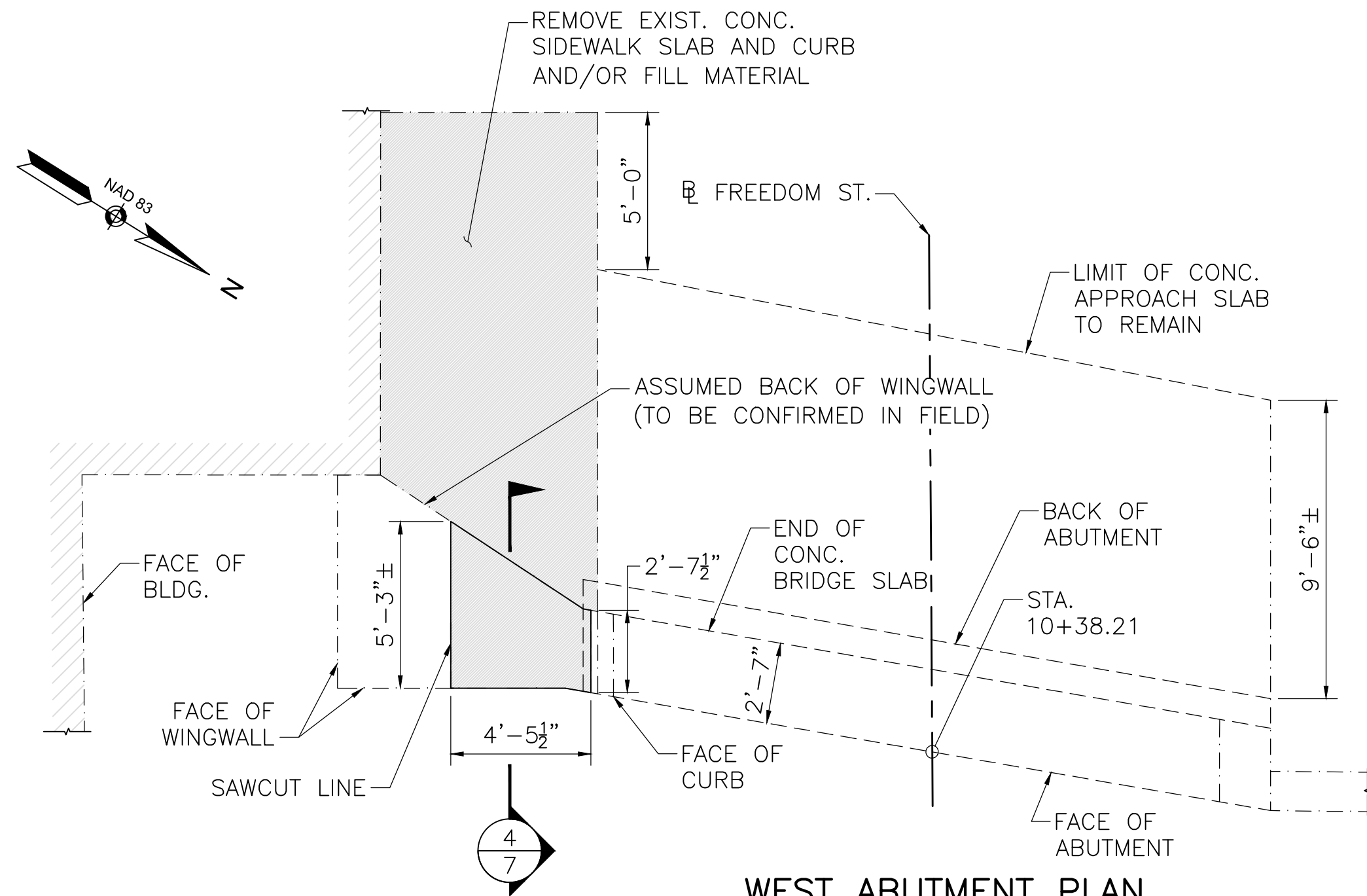
PLOT DATE: 7/12/2016 2:35 PM

ISSUE DATE 3/31/2016 11:38 AM

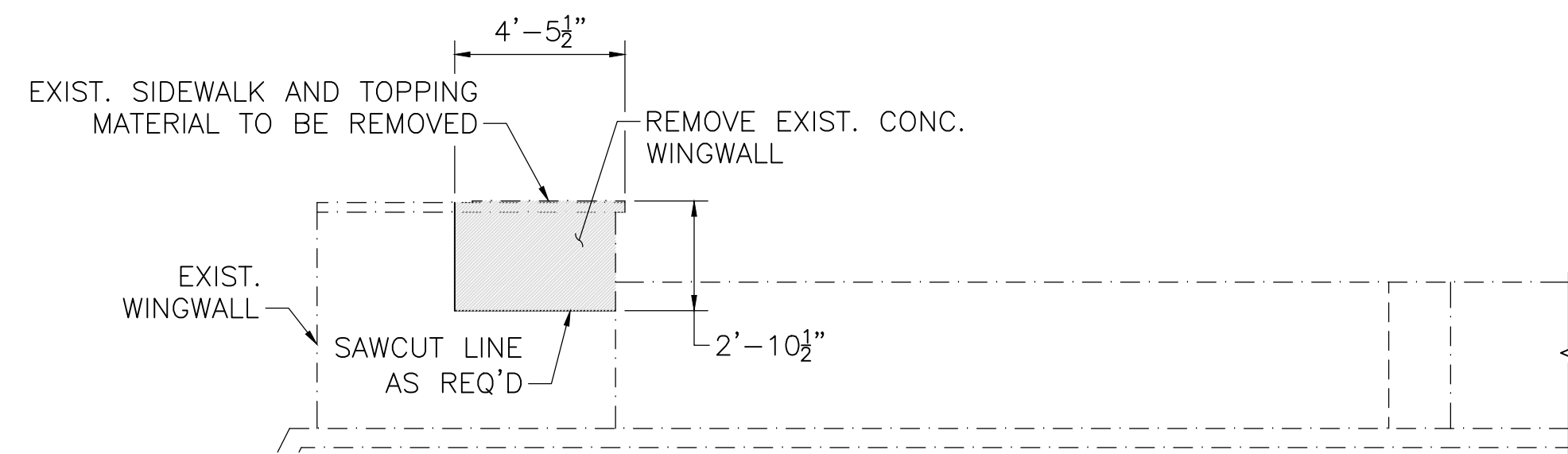
SHEET No. **6 OF 14**

File: Sheet_Demo.dwg

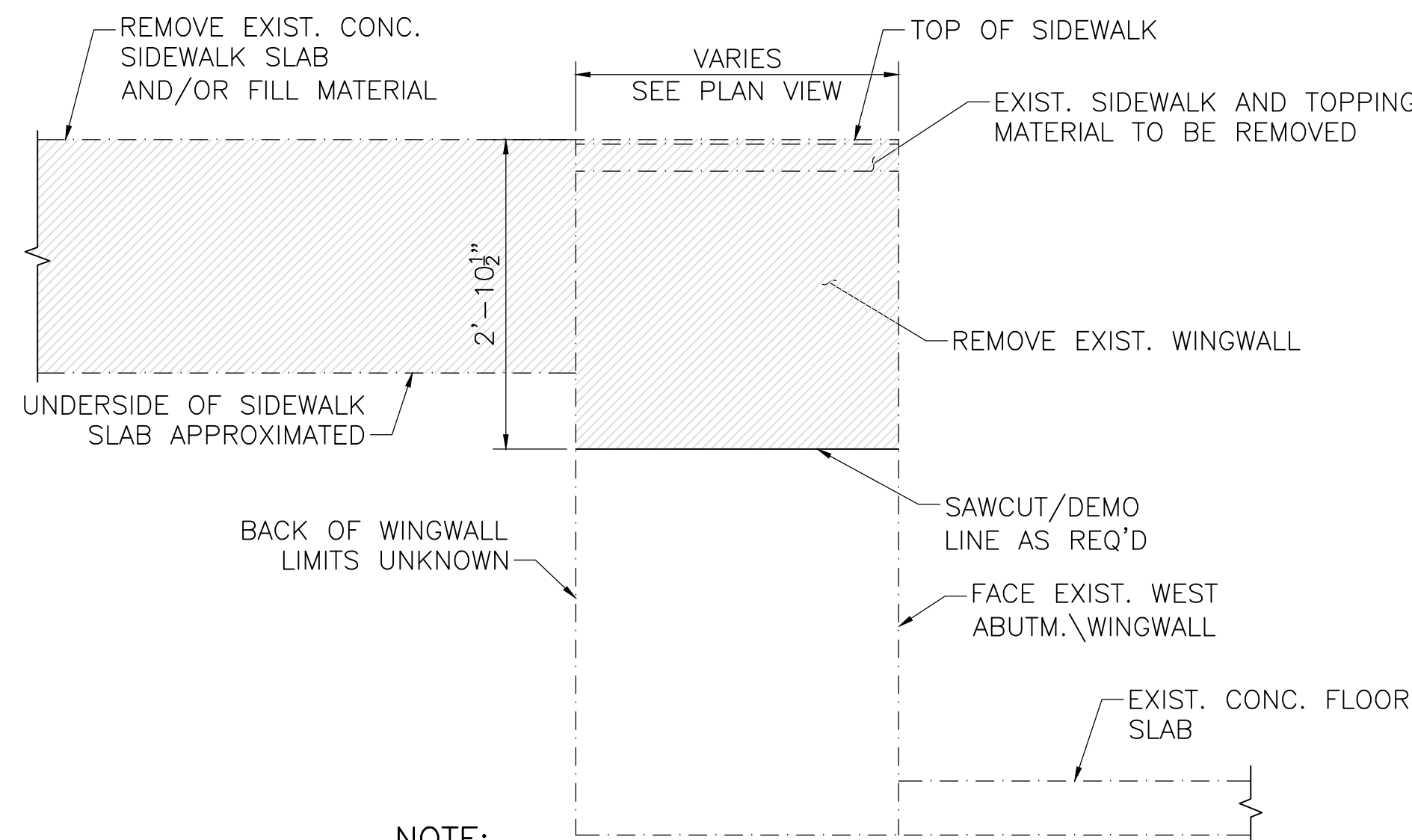
Q:\5205\5275 - HOPEDALE - FREEDOM STREET\DRAWING FILES\STRUCTURAL - FINAL DESIGN - DEMO PLANS AND SECTIONS\SHEET_DEMO2.DWG



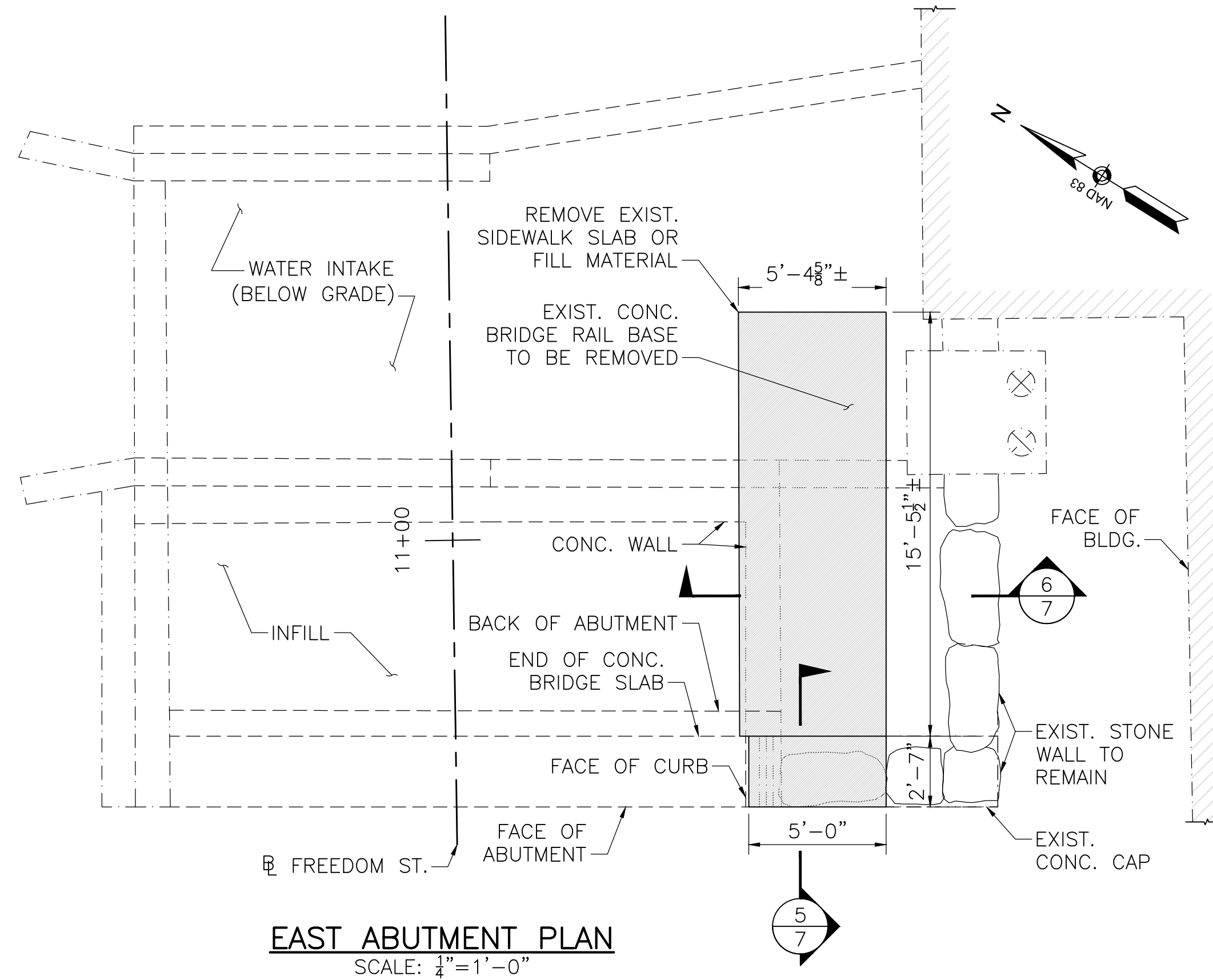
WEST ABUTMENT PLAN
SCALE: 1/4"=1'-0"



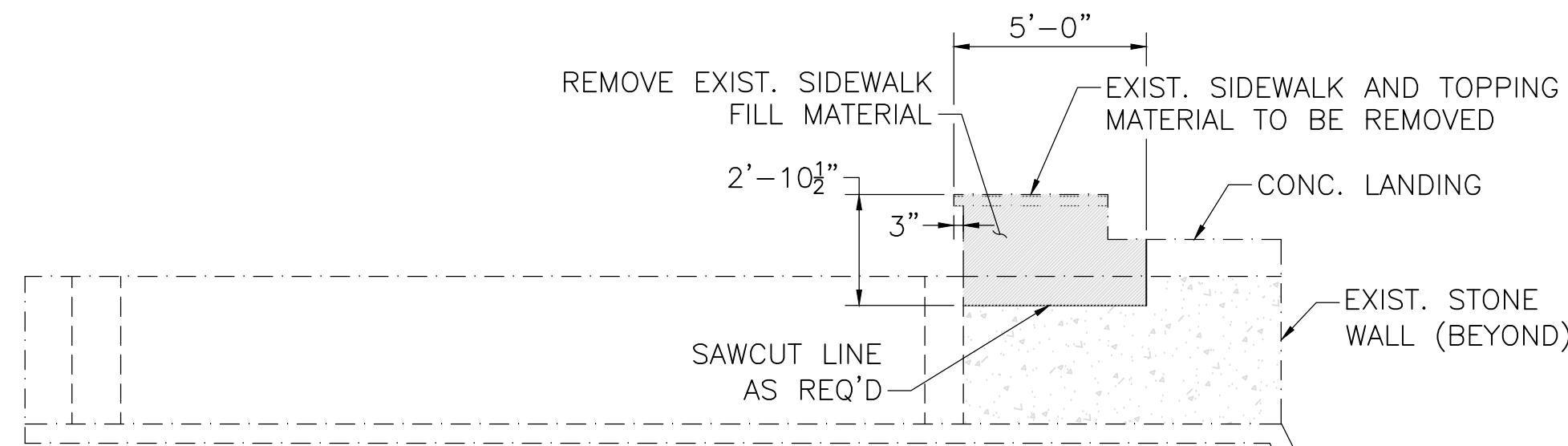
WEST ABUTMENT ELEVATION
SCALE: 1/4"=1'-0"



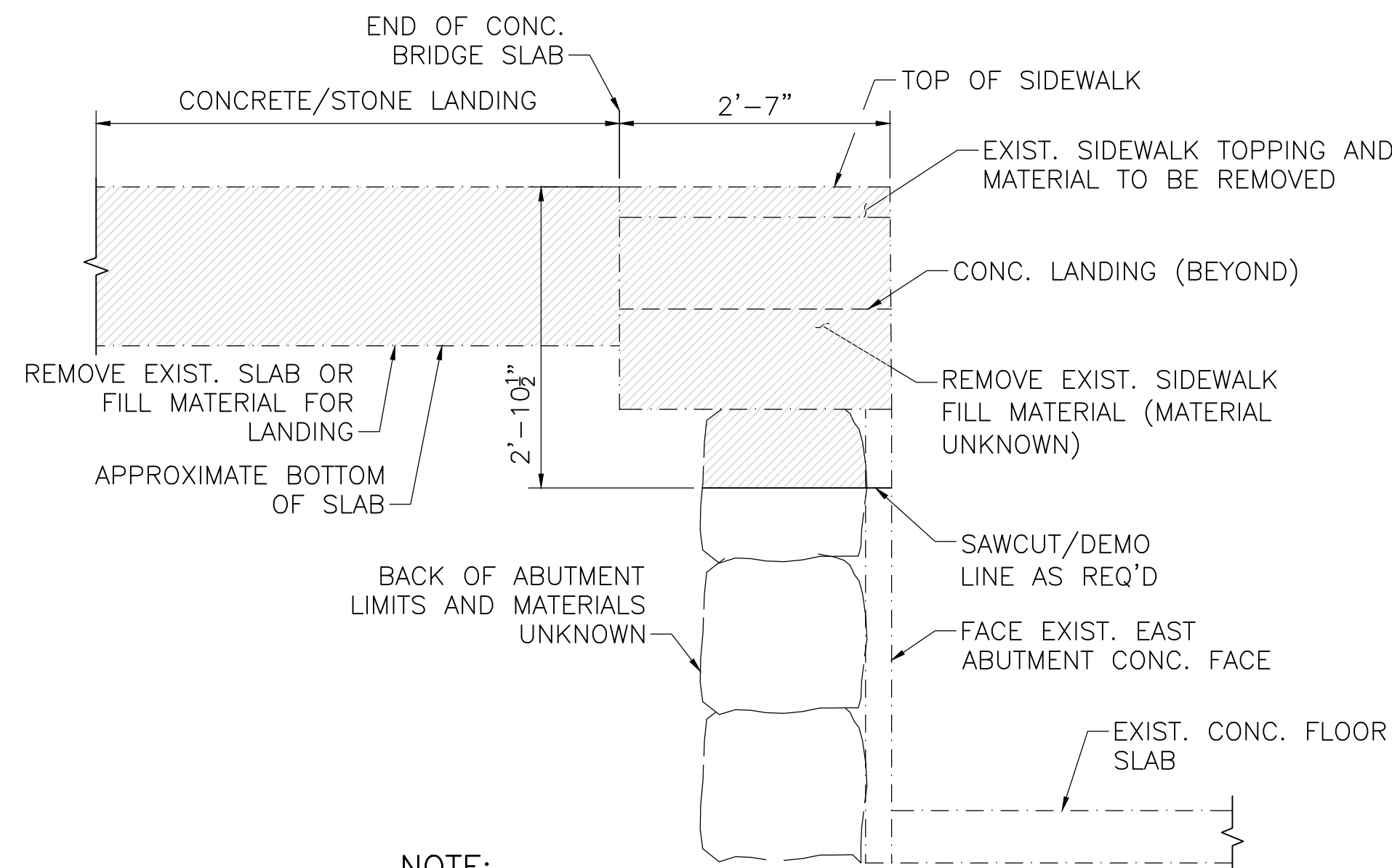
WEST ABUTMENT - SECTION 4
SCALE: 3/4"=1'-0"



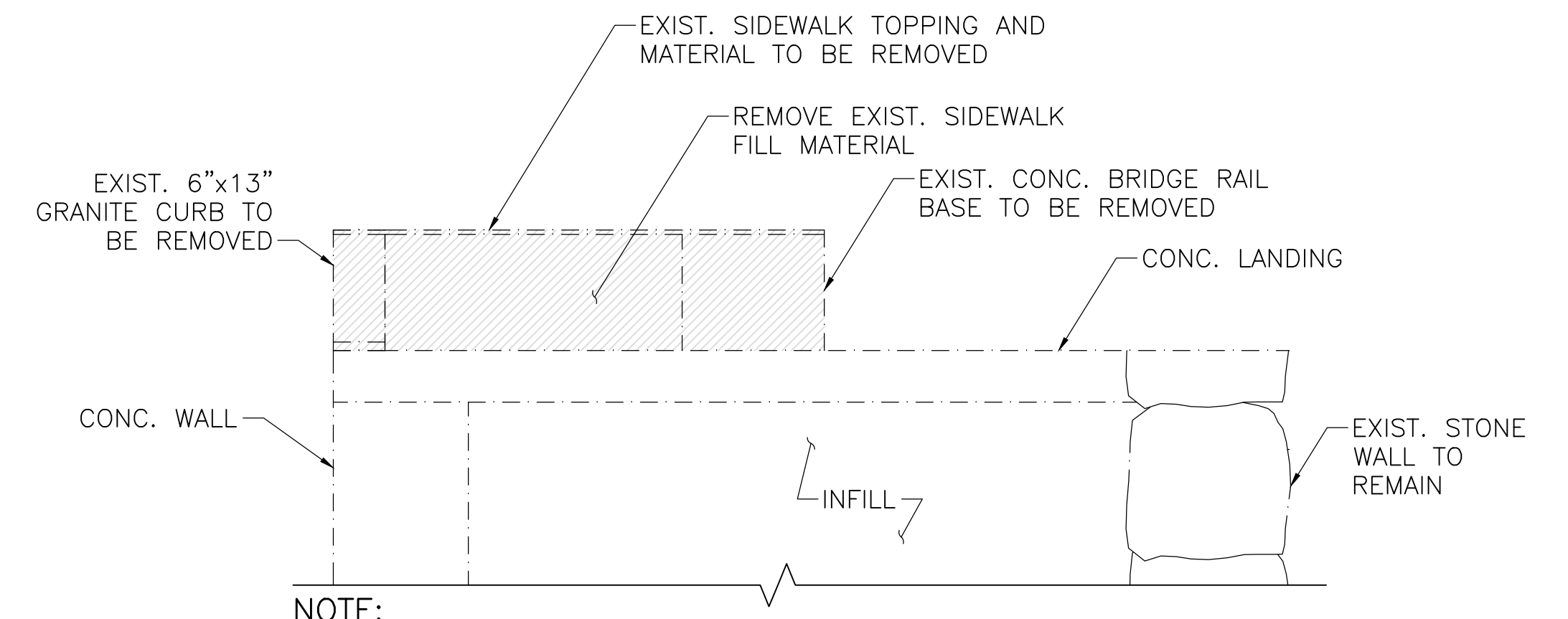
EAST ABUTMENT PLAN
SCALE: 1/4"=1'-0"



EAST ABUTMENT ELEVATION
SCALE: 1/4"=1'-0"



EAST ABUTMENT - SECTION 5
SCALE: 3/4"=1'-0"

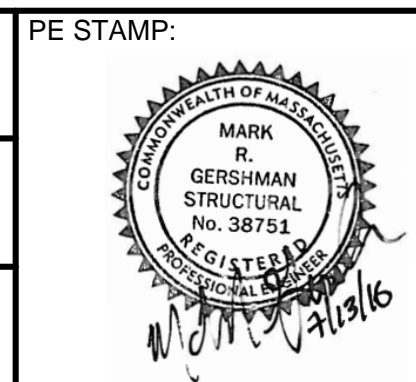


SOUTHEAST APPROACH - SECTION 6
SCALE: 3/4"=1'-0"

NOTES:
SEE SHEET 6 FOR DEMOLITION NOTES.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	DESCRIPTION

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DESIGNED BY:	
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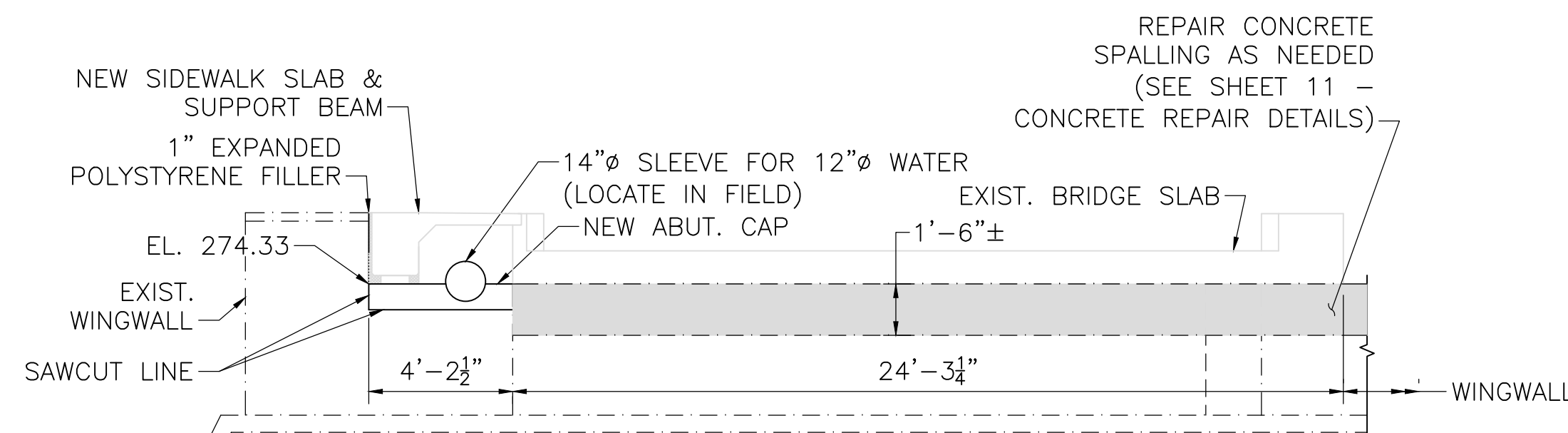
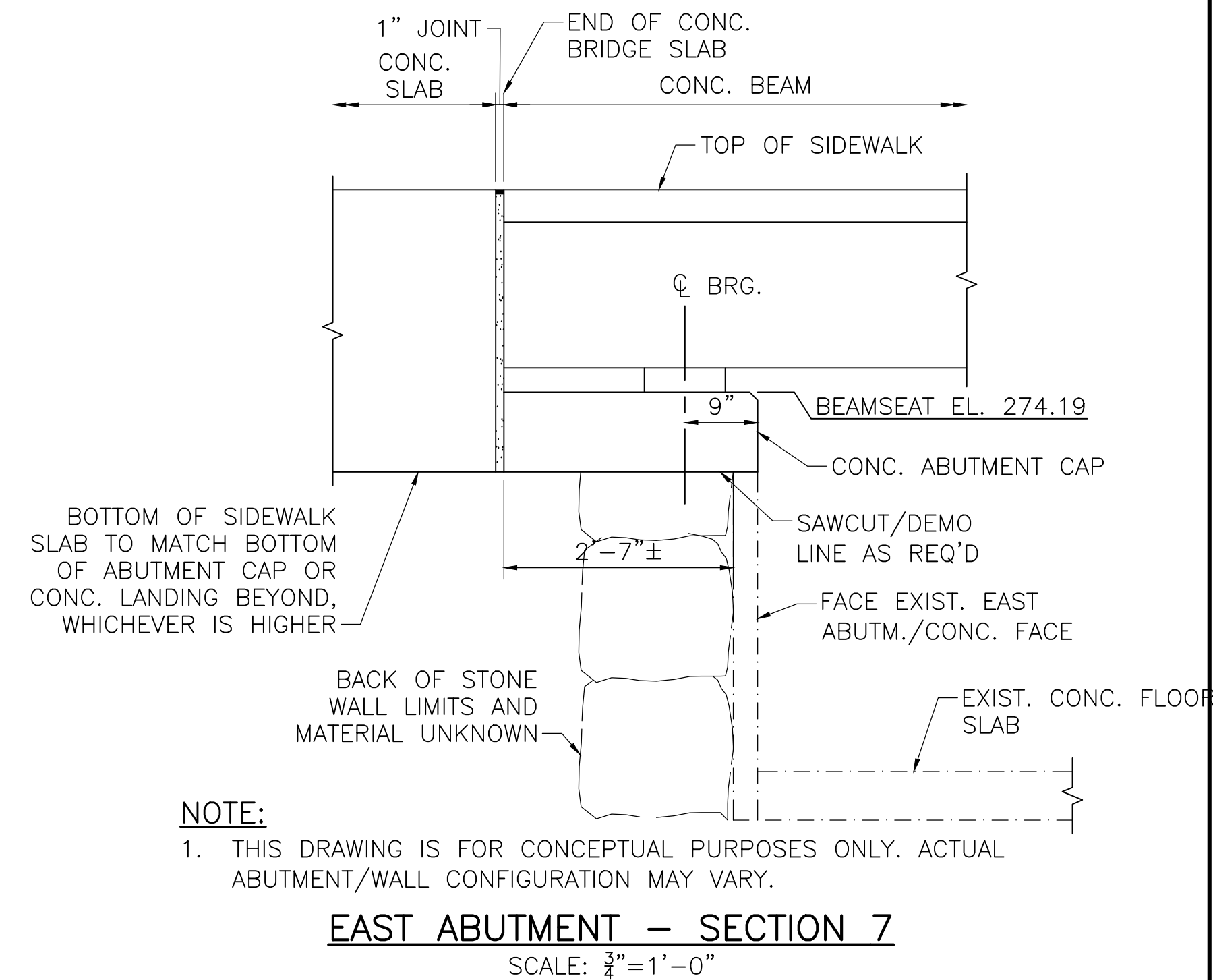
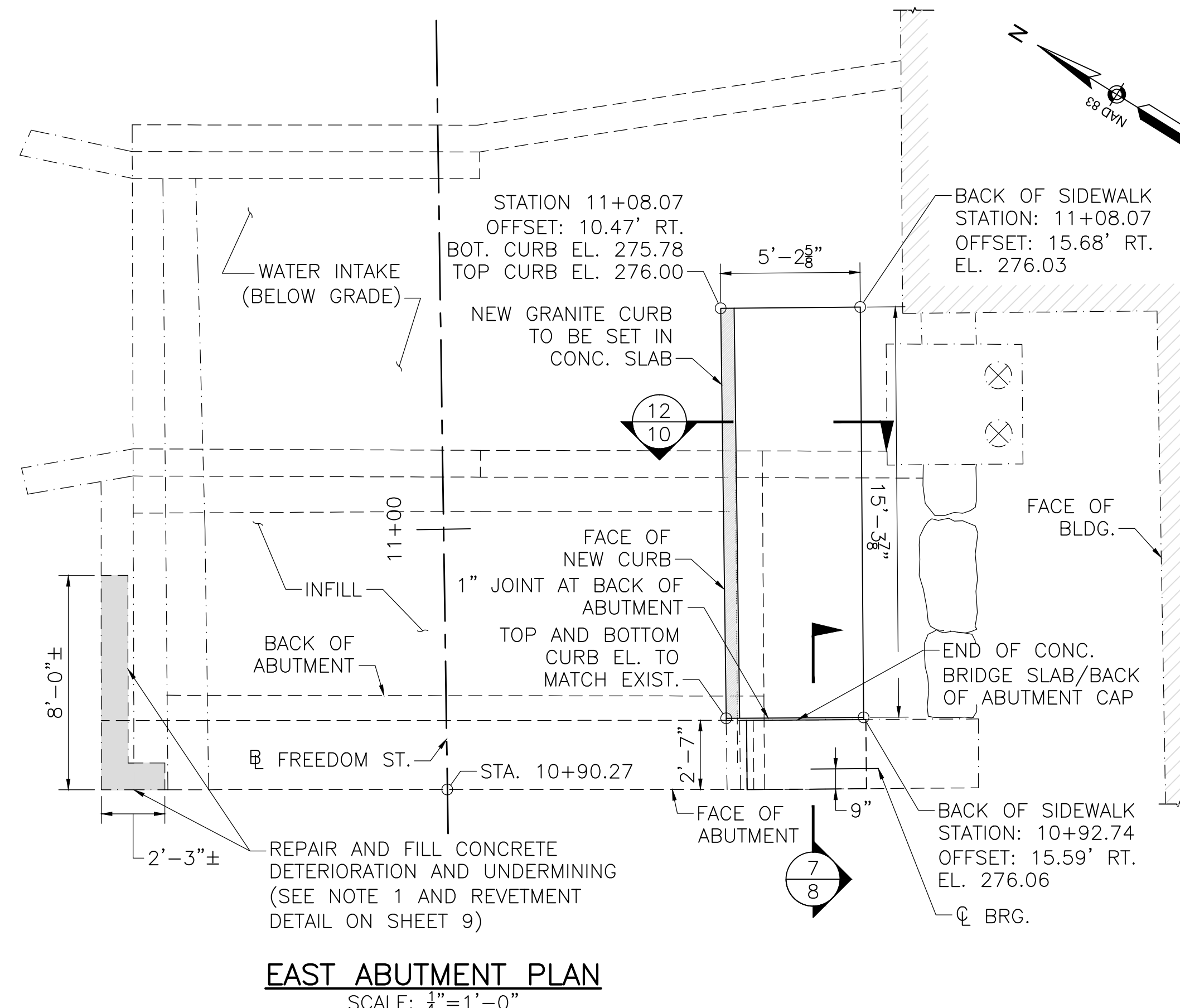
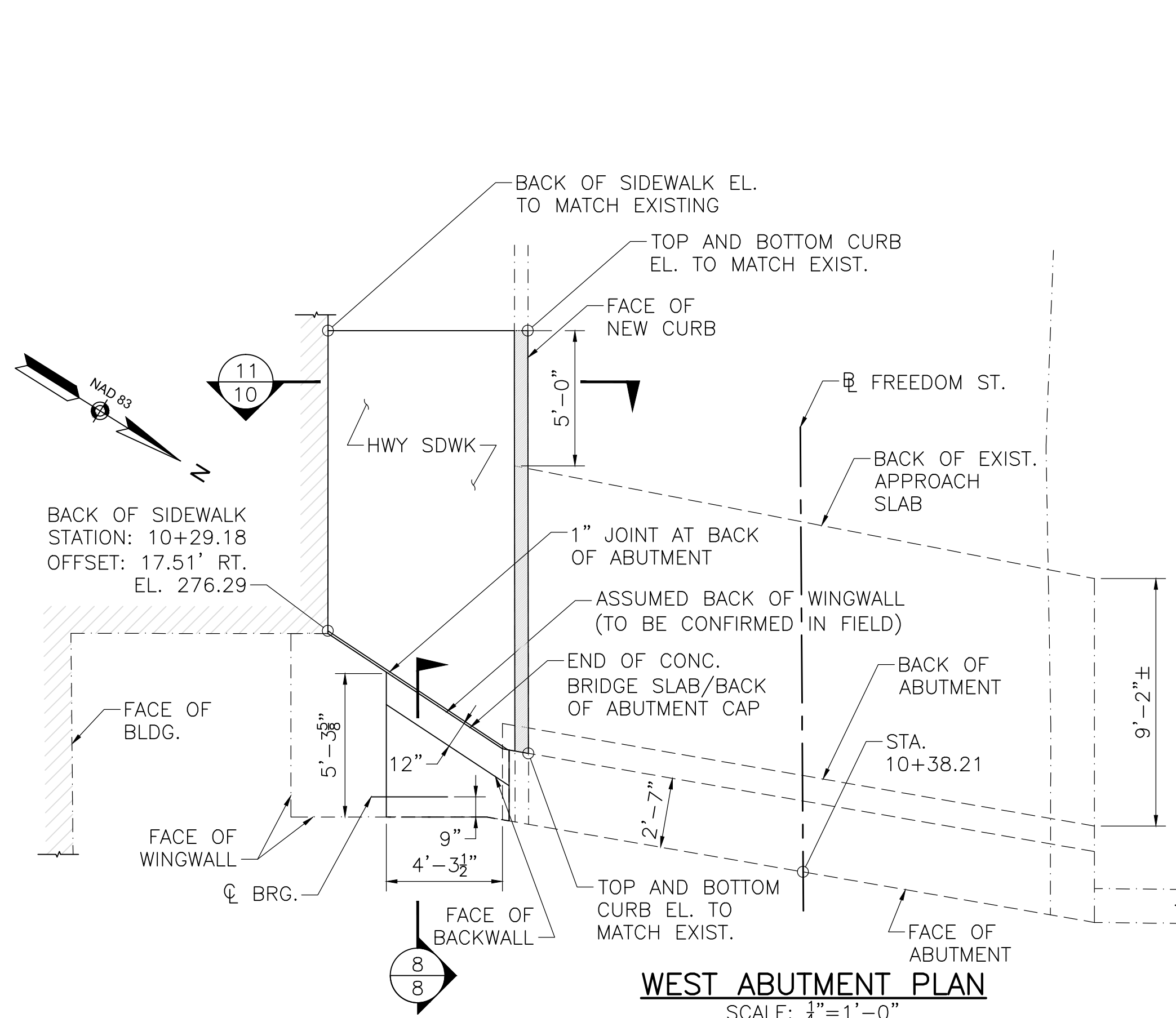
PREPARED BY:	

SCALE:	AS SHOWN

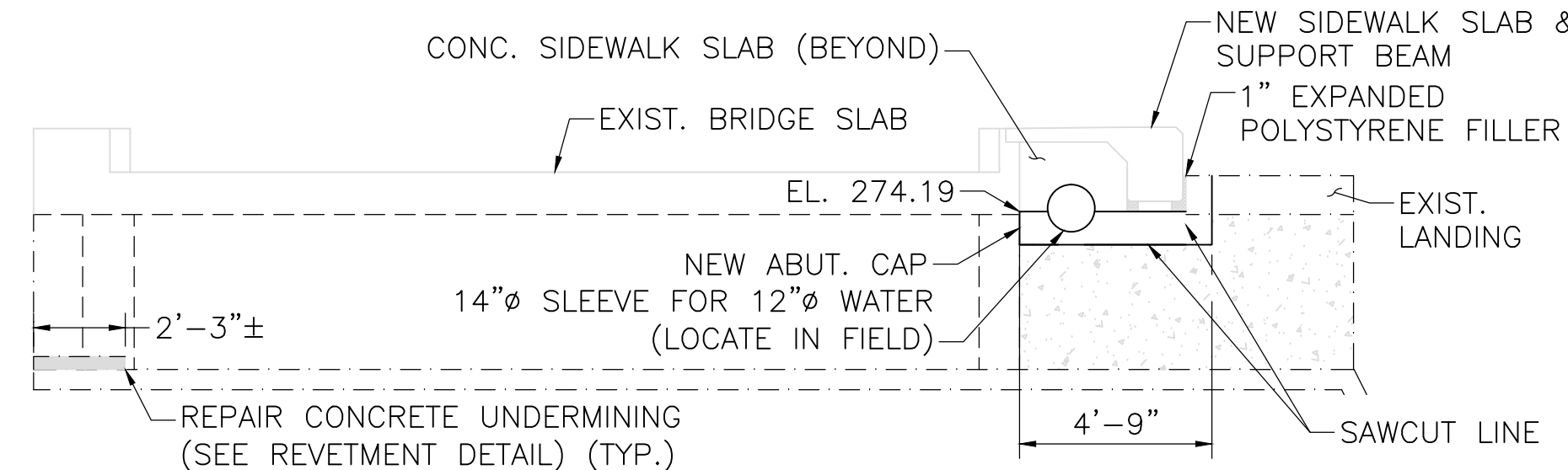
FREEDOM STREET OVER MILL RIVER DEMOLITION (2 OF 2) HOPEDALE, MASSACHUSETTS

BETA JOB No.	5275
PLOT DATE:	7/12/2016 2:36 PM
ISSUE DATE	4/6/2016 2:22 PM
SHEET No.	7 OF 14
File:	Sheet_Demo2.dwg

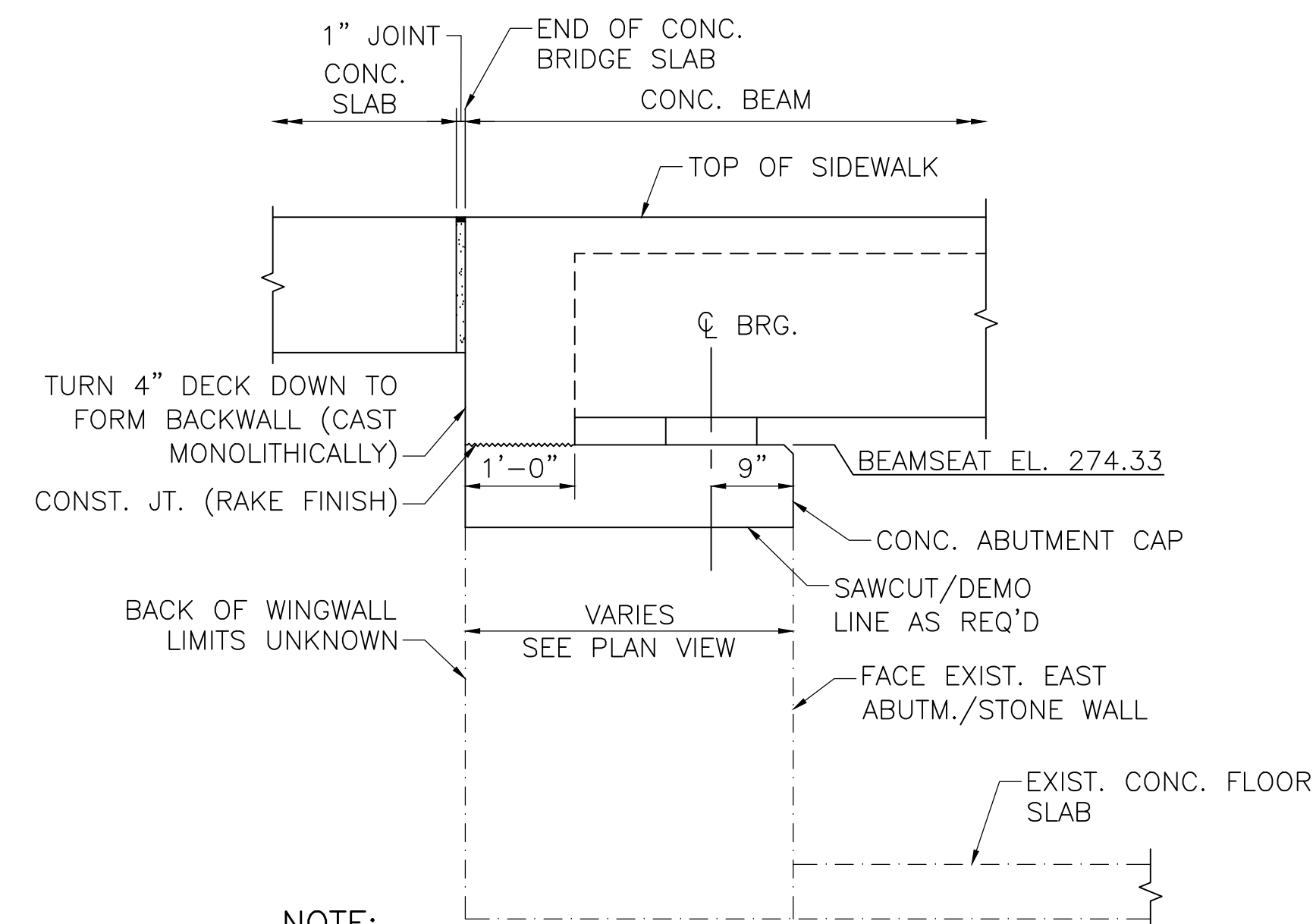
Q:\5205\5275 - HOPEDALE - FREEDOM STREET\DRAWING FILES\STRUCTURAL - FINAL DESIGN - ABUTMENT PLAN AND ELEVATIONS\Sheet_Abutments.dwg



- NOTE:
1. ABUTMENT REPAIRS SHALL BE MARKED FOR APPROVAL BY ENGINEER.
 2. SPALL REPAIRS AT BEAM SEAT SHALL BE DONE IN SEQUENCE, NO MORE THAN 3'-0" OF BRIDGE DECK SLAB (MEASURED ALONG BEAM SEAT) SHALL BE DONE IN SEQUENCE.

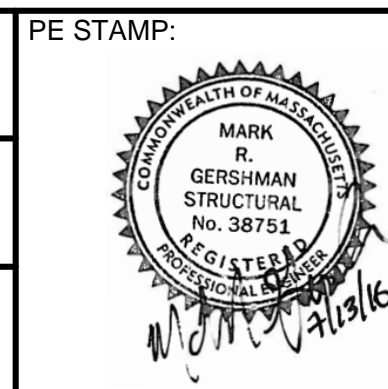


- NOTE:
1. ABUTMENT REPAIRS SHALL BE MARKED FOR APPROVAL BY ENGINEER.



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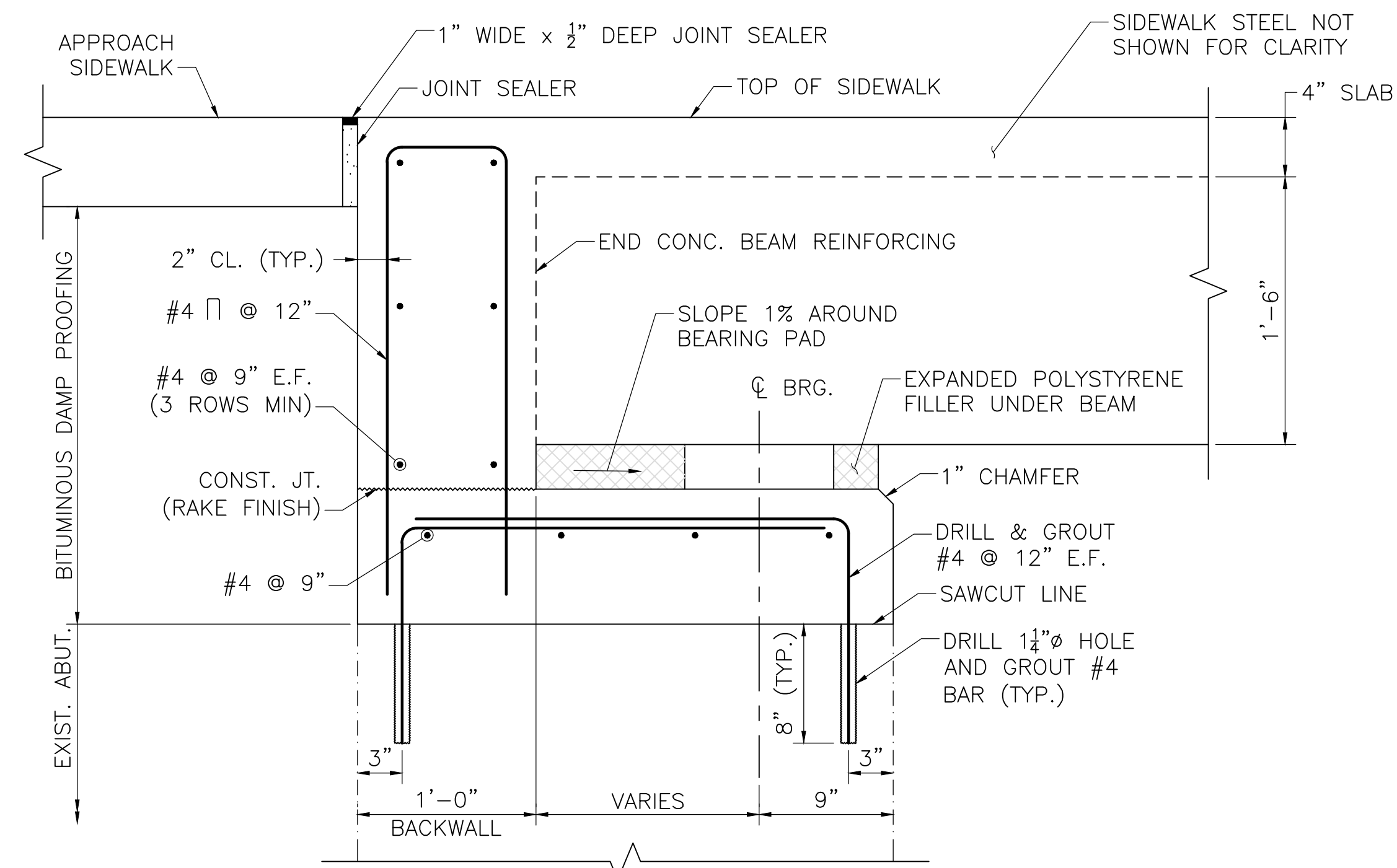
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SCALE:

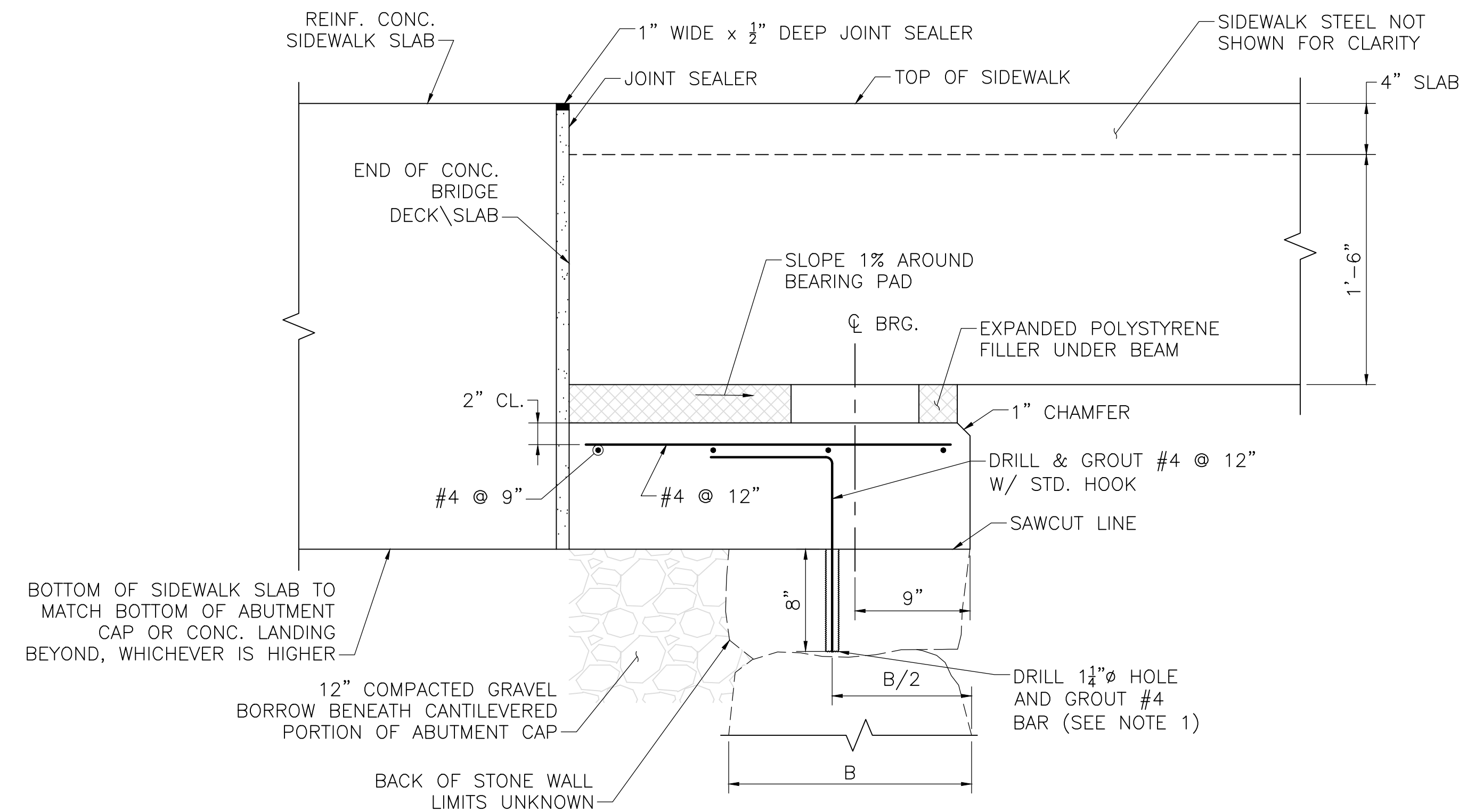
AS SHOWN

**FREEDOM STREET
OVER MILL RIVER
ABUTMENT PLAN & ELEVATION
HOPEDALE, MASSACHUSETTS**

BETA JOB No. 5275
PLOT DATE: 7/12/2016 2:36 PM
ISSUE DATE: 3/31/2016 11:38 AM
SHEET No. **8 OF 14**
File: Sheet_Abutments.dwg



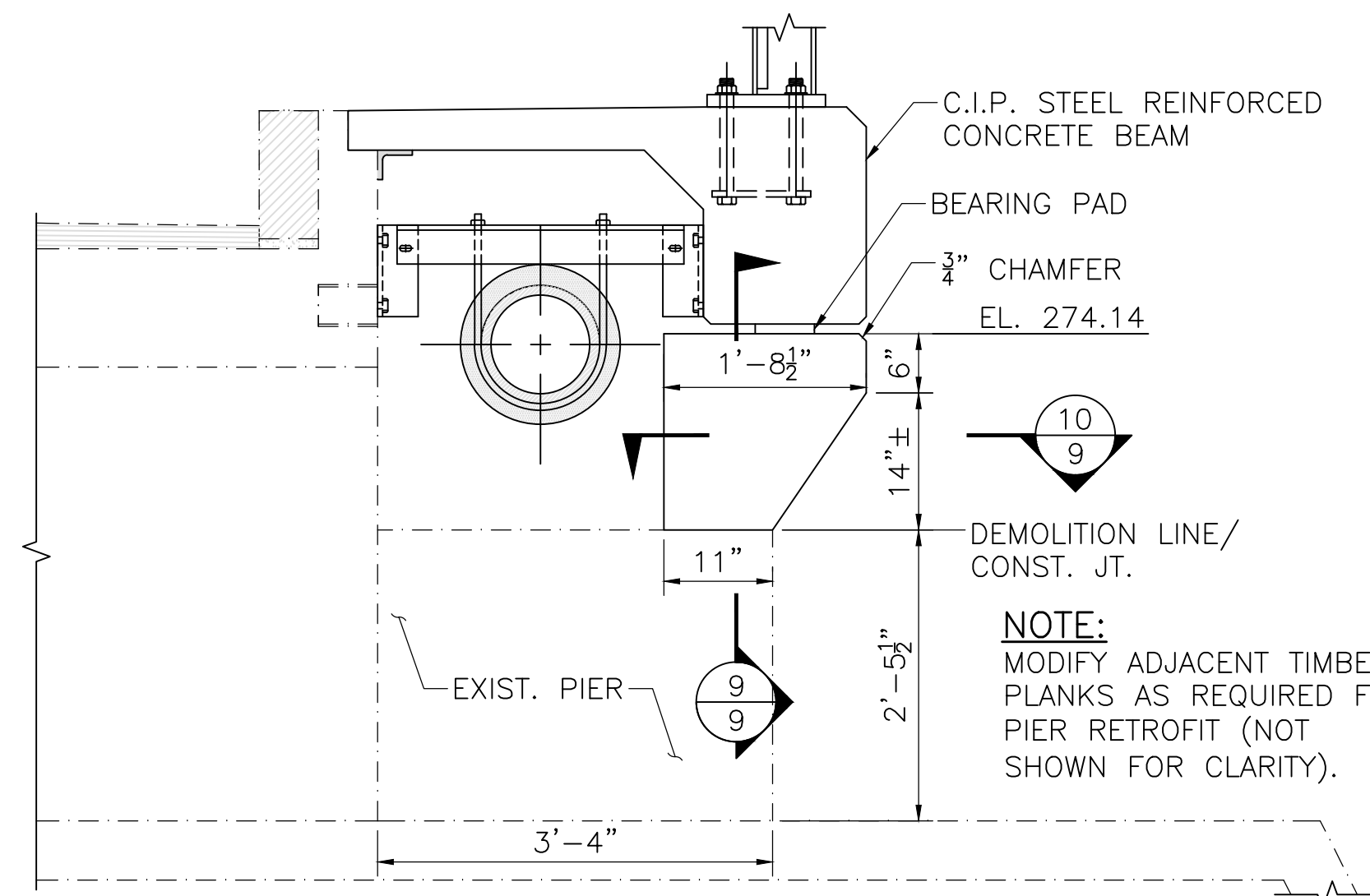
DETAILS AT WEST ABUTMENT
SCALE: $1\frac{1}{2}" = 1'-0"$



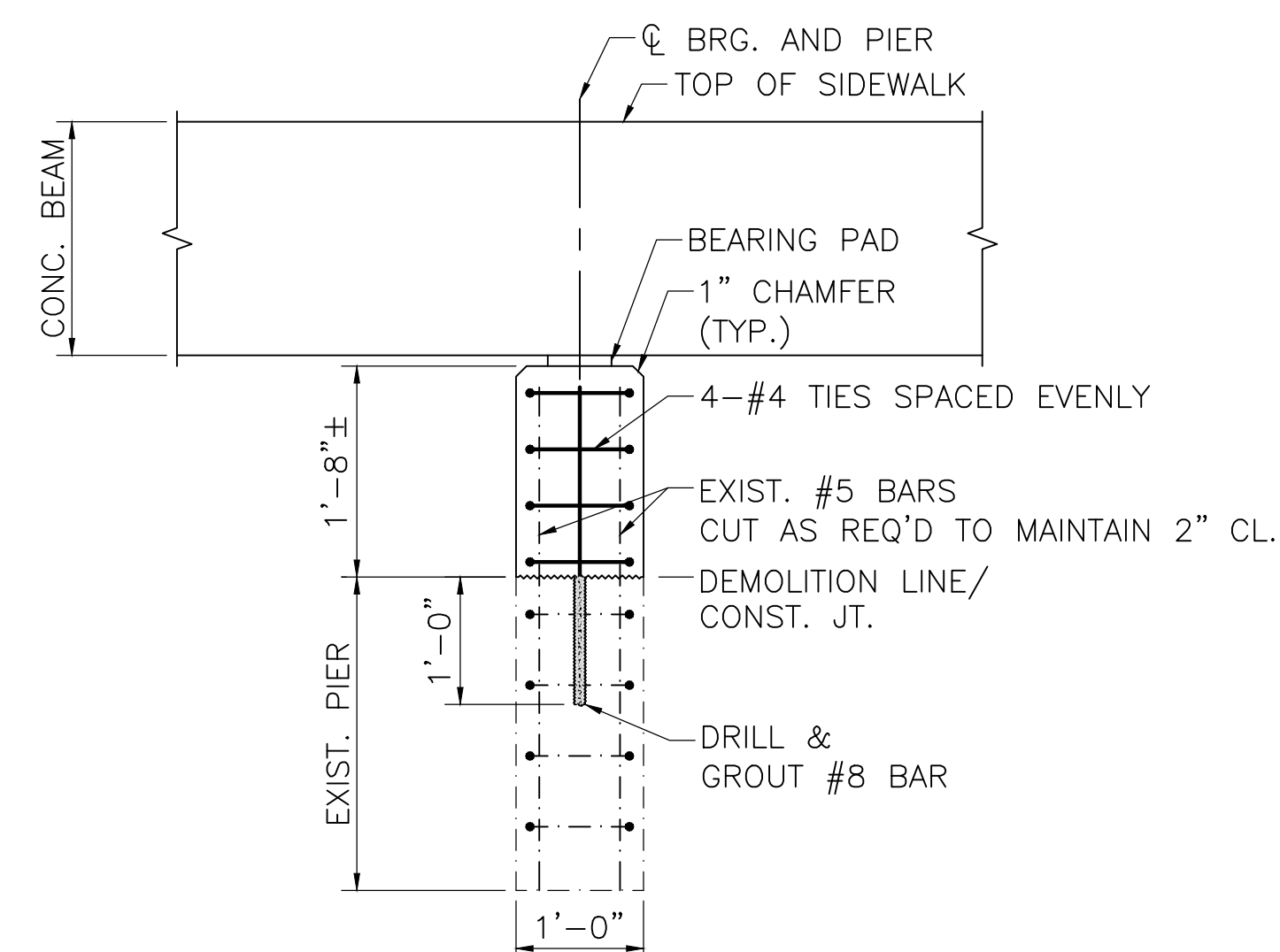
NOTES:

1. DRILLING AND GROUTING OF #4 BARS IS ONLY PERMITTED IN COMPETENT ROCK. IF CONDITIONS ARE NOT FAVORABLE THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR ANCHORAGE ALTERNATIVES.

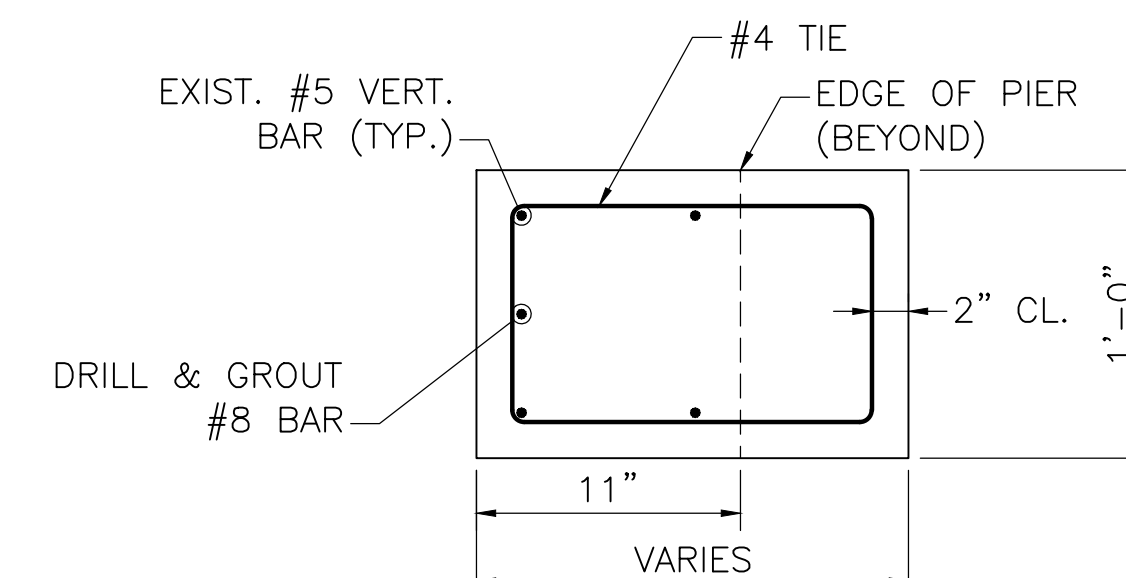
DETAILS AT EAST ABUTMENT
SCALE: $1\frac{1}{2}" = 1'-0"$



PIER ELEVATION
SCALE: $\frac{3}{4}" = 1' - 0"$



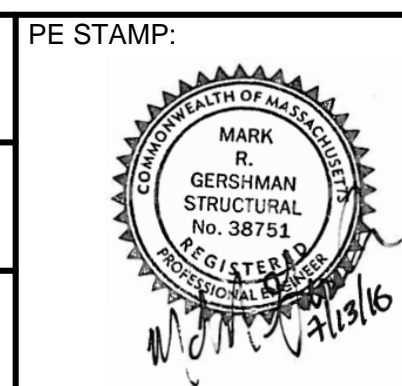
SECTION 9
SCALE: $\frac{3}{4}" = 1' - 0"$



SECTION 10
SCALE: $1\frac{1}{2}"=1'-0"$

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	DESCRIPTION

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SCALE:

AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

**FREEDOM STREET
OVER MILL RIVER
SUBSTRUCTURE DETAILS
HOPEDALE, MASSACHUSETTS**

BETA JOB No. 5275

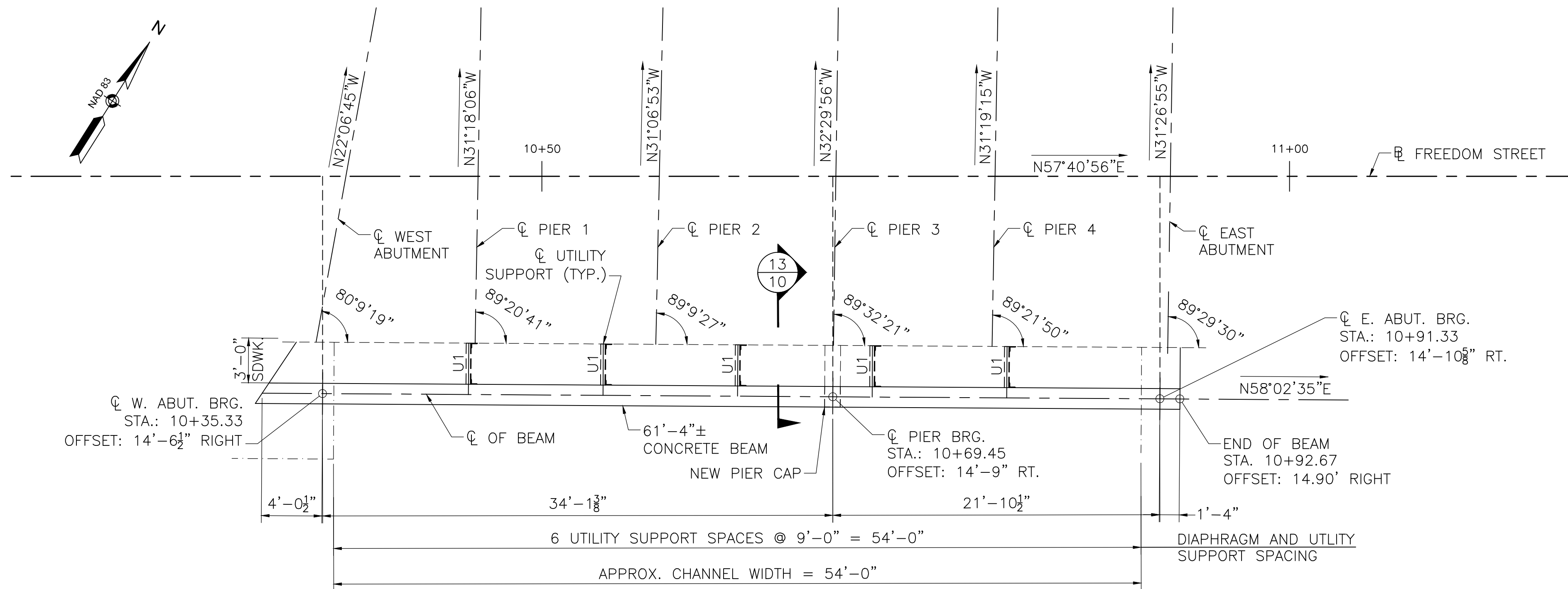
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ISSUE DATE 3/31/2016 11:38 AM

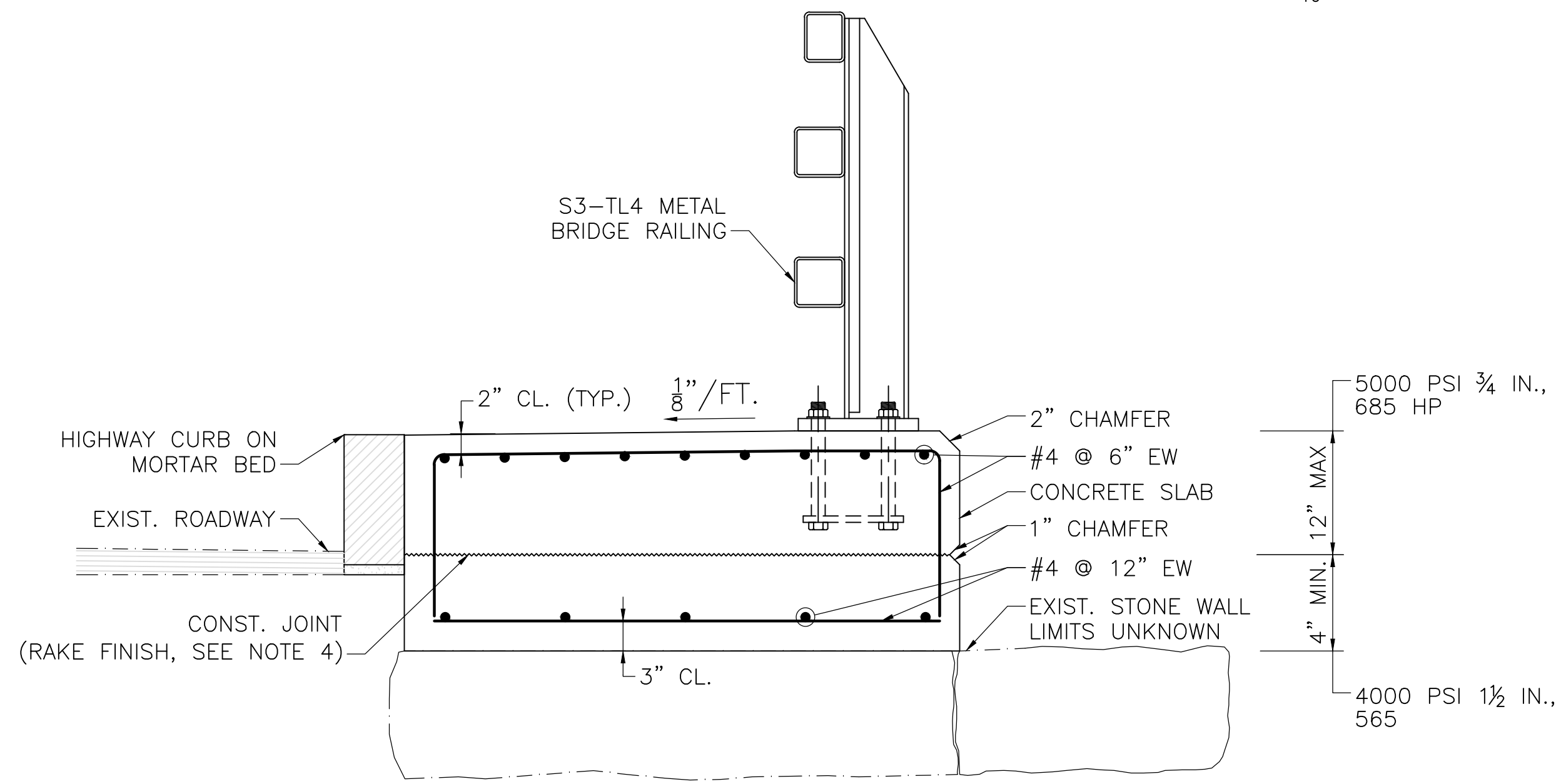
SHEET No. **9 OF 14**

File: Sheet_AbumentDetails.dwg

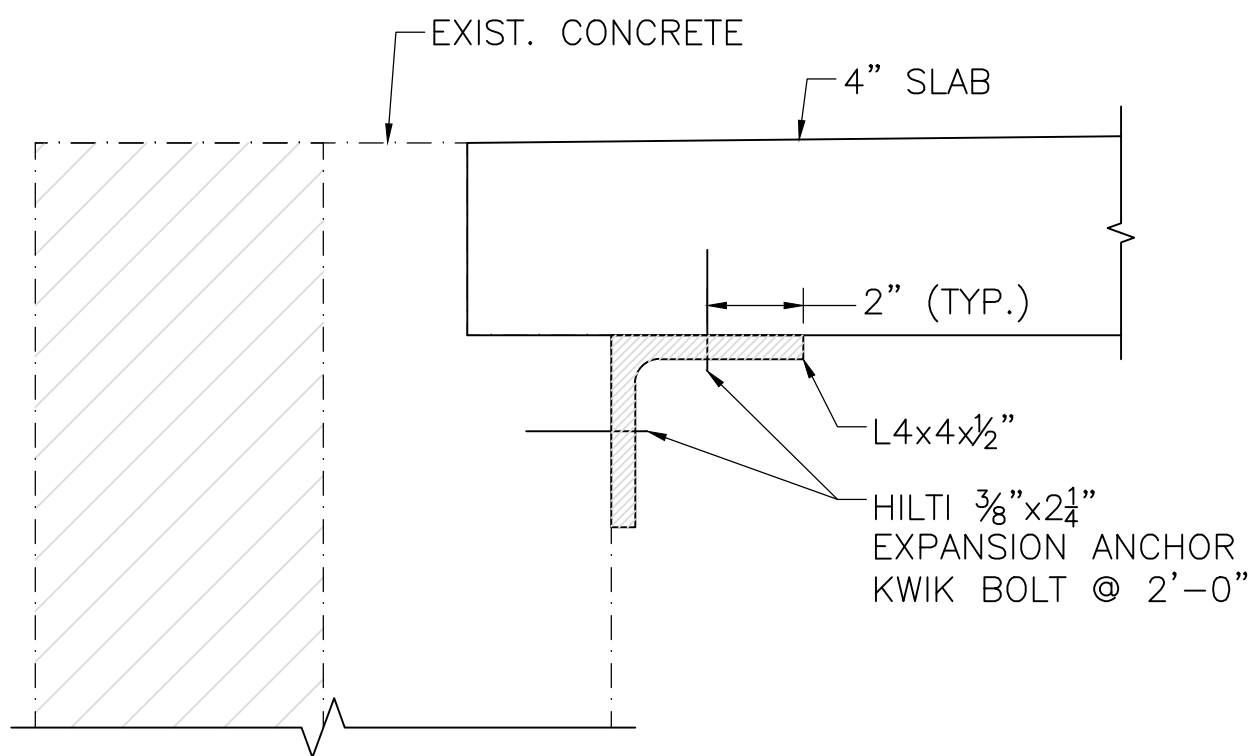
Q:\5200\S\5275 - HOPEDALE - FREEDOM STREET\DRAWING FILES\STRUCTURAL-FINAL DESIGN-SIDEWALK DETAILS\SIDEWALK DETAILS.DWG



FRAMING PLAN
SCALE: $\frac{3}{16}$ " = 1'-0"



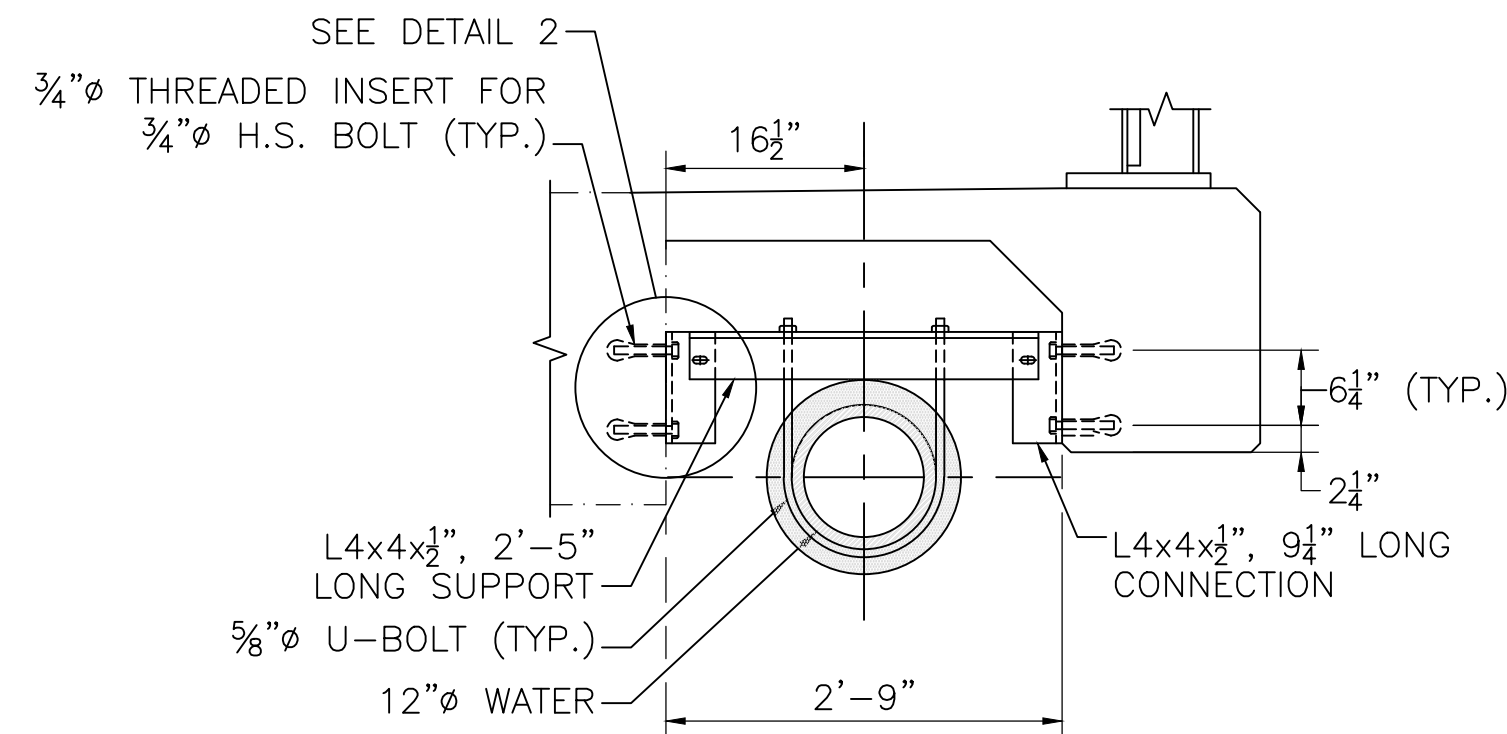
SOUTHEAST SIDEWALK SECTION 12
SCALE: 1" = 1'-0"



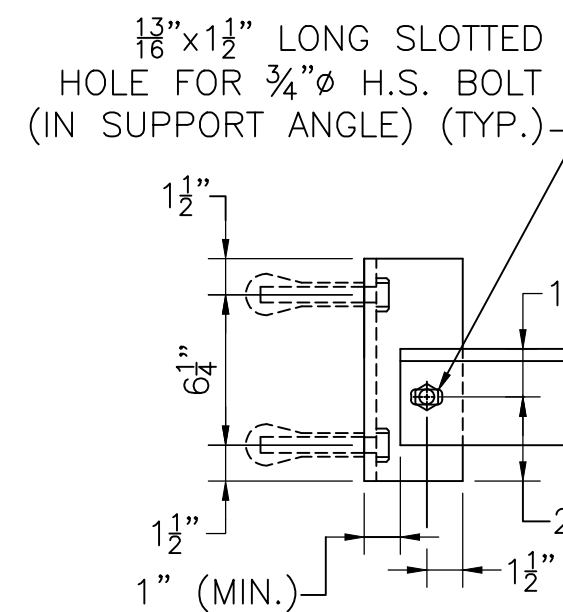
DETAIL 1
SCALE: 1" = 4'-0"

NOTES:

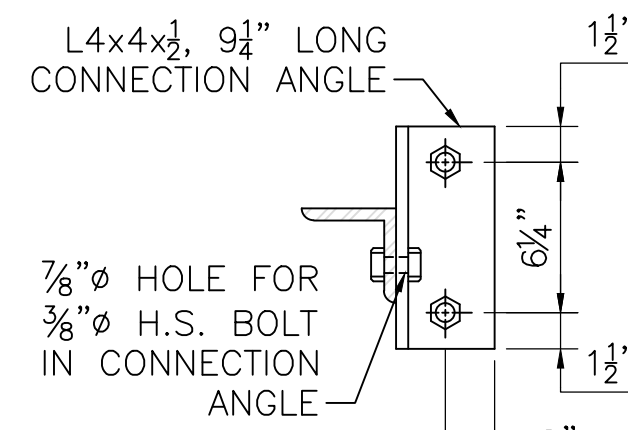
1. DETAIL IS SHOWN ASSUMING ANGLE IS INSTALLED AFTER 4" SLAB IS SET AND CURED. IF CONTRACTOR ELECTS TO INSTALL PRIOR TO SLAB PLACEMENT, HILTI ANCHORS IN 4" SLAB MAY BE SUBSTITUTED WITH SIMILAR ANCHORS CAST INTO SLAB. CONTRACTOR TO SUBMIT ALTERNATIVE DETAIL TO THE ENGINEER.



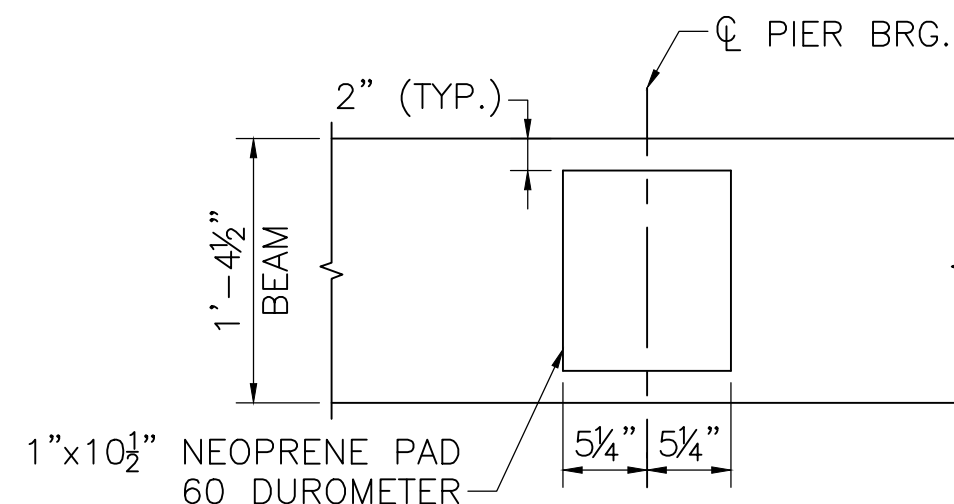
[U1] UTILITY SUPPORT DETAIL
SCALE: $\frac{3}{4}$ " = 1'-0"



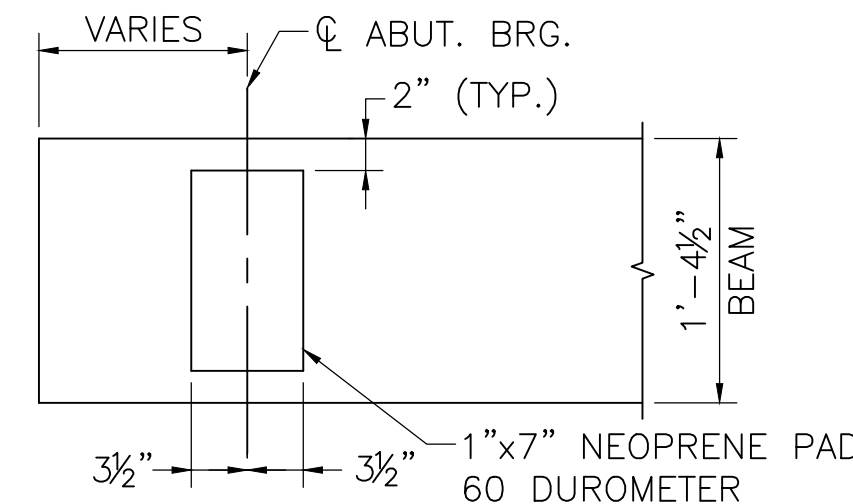
DETAIL 2
SCALE: NOT TO SCALE



SECTION 10
SCALE: NOT TO SCALE



[PIER]



[ABUTMENT]

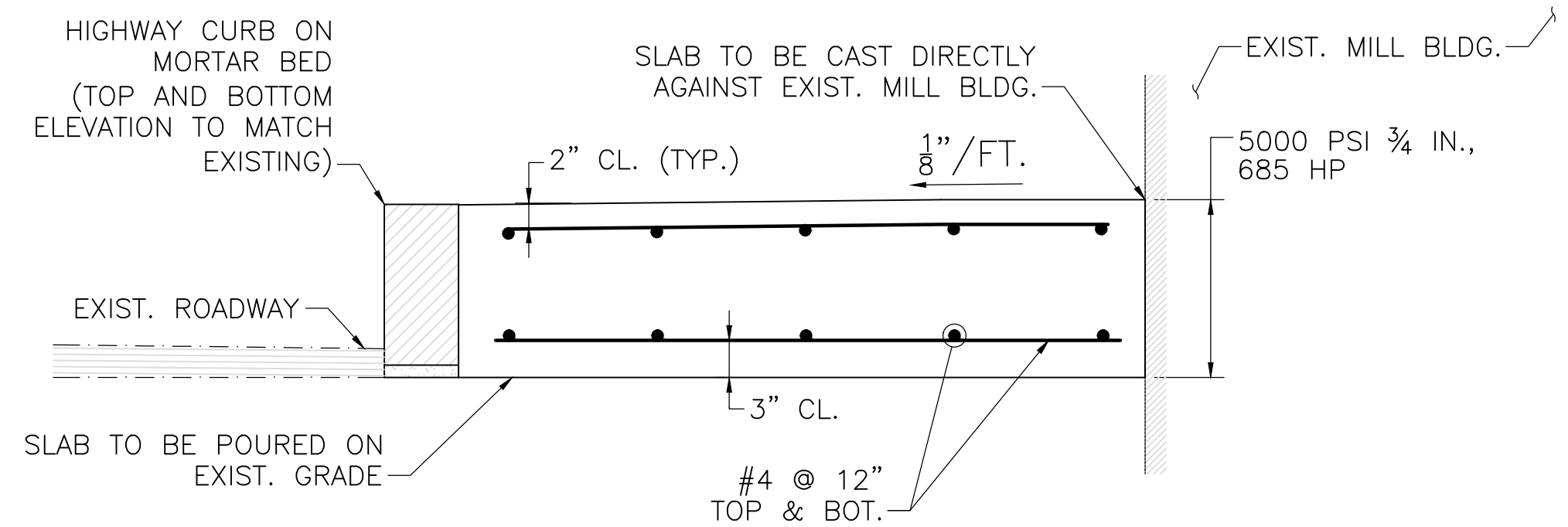
LAYOUT OF BEARINGS
SCALE: $1\frac{1}{2}$ " = 1'-0"

GENERAL NOTES:

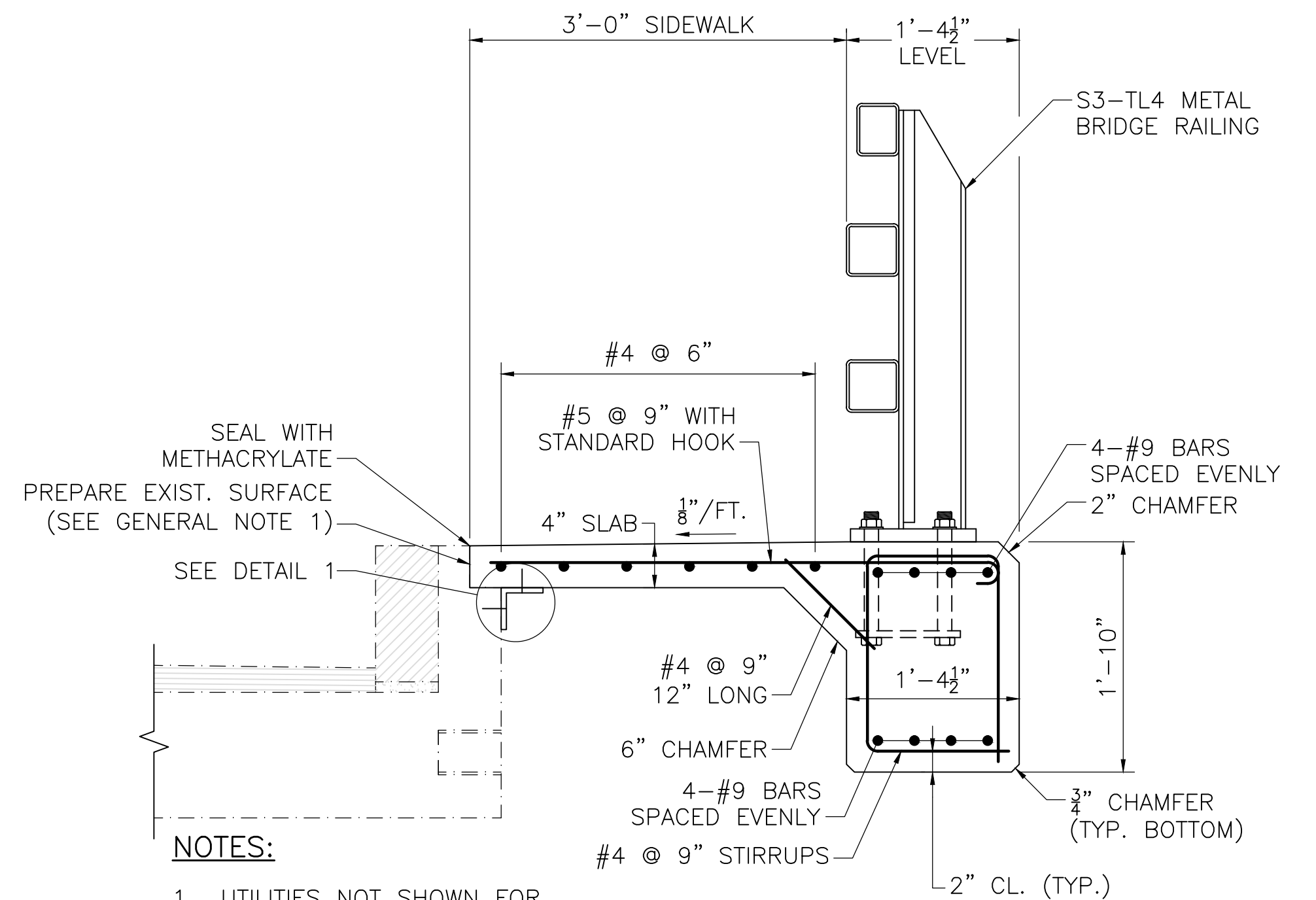
1. THE SURFACE OF THE PREVIOUSLY CAST CONCRETE SHALL BE BLAST CLEANED, ROUGHENED, WETTED WITH CLEAN WATER, AND THEN FLUSHED WITH A MORTAR COMPOSED OF EQUAL PARTS CEMENT AND SAND SPECIFIED FOR THE NEW CONCRETE, BEFORE NEW CONCRETE IS PLACED ADJACENT THERETO. NEW CONCRETE SHALL BE PLACED BEFORE MORTAR HAS TAKEN INITIAL SET.
2. IN LIEU OF THE MORTAR, AN EPOXY ADHESIVE SUITABLE FOR BONDING FRESH CONCRETE TO HARDENED CONCRETE FOR LOAD BEARING APPLICATIONS MAY BE USED. THE EPOXY ADHESIVE SHALL CONFORM TO AASHTO M 235 TYPE V AND SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
3. ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO M 270 GRADE 36.
4. IF TOTAL SLAB EXCEEDS 12", SLAB SHALL BE TWO SEPARATE POURS WITH CONSTRUCTION JOINT RAKE FINISH. FIRST POUR SHALL BE 4000 PSI, 1 1/2 IN., 565 CEMENT CONCRETE.
5. ALL STRUCTURAL STEEL AND FASTENERS SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 111 AND M 232.

UTILITY SUPPORT NOTES:

6. THE 3/4" Ø THREADED INSERTS FOR 3/4" Ø BOLTS SHALL BE CAST INTO THE PRECAST BEAMS BY THE FABRICATOR AND SHALL PROVIDE A MINIMUM NOMINAL TENSILE RESISTANCE OF 6.0 KIPS AND A MINIMUM NOMINAL SHEAR RESISTANCE OF 6.0 KIPS IN 3000 PSI CONCRETE.



SOUTHWEST SIDEWALK SECTION 11
SCALE: 1" = 1'-0"



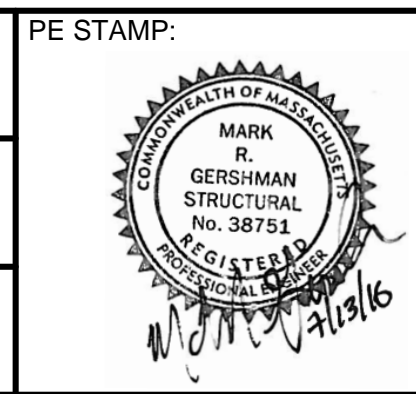
NOTES:

1. UTILITIES NOT SHOWN FOR CLARITY.

BRIDGE SIDEWALK SECTION 13
SCALE: 1" = 1'-0"

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	DESCRIPTION

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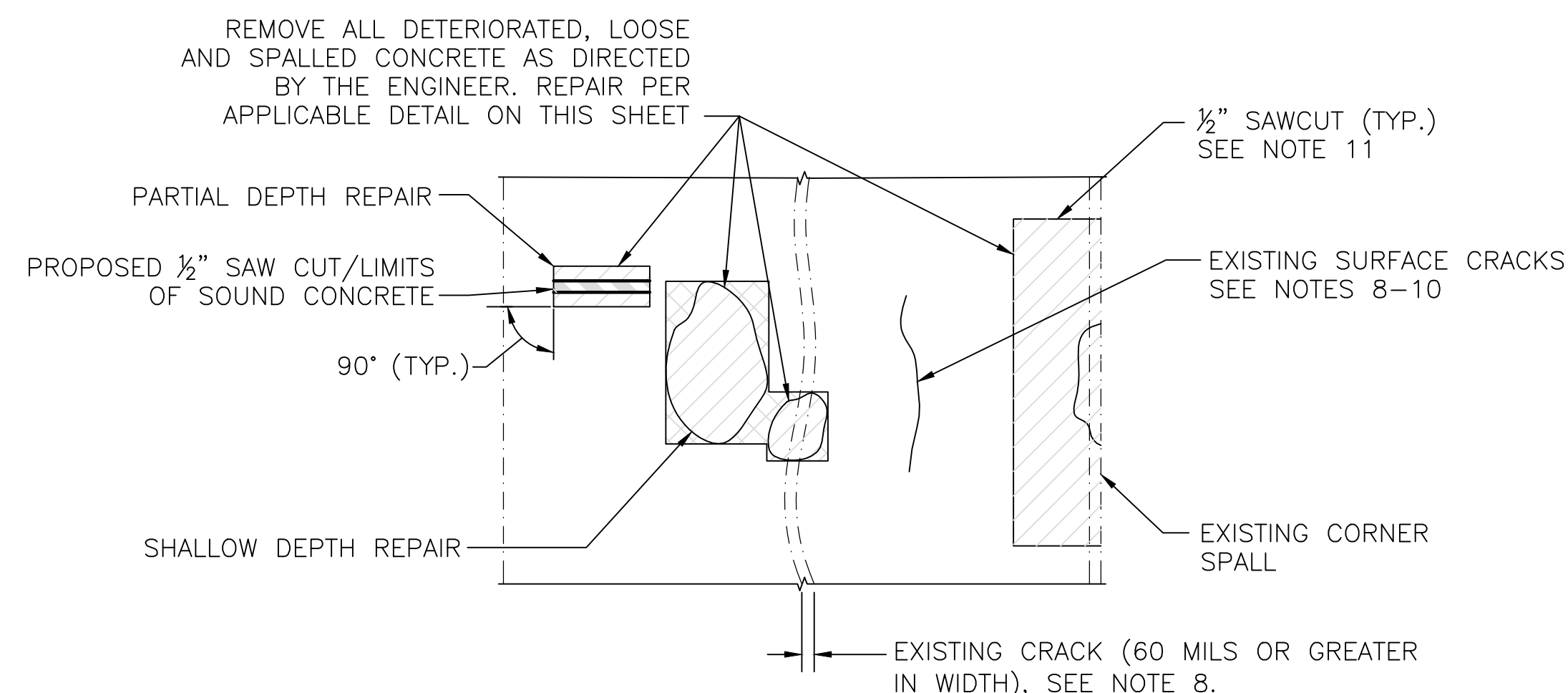


PREPARED BY:	
SCALE:	AS SHOWN

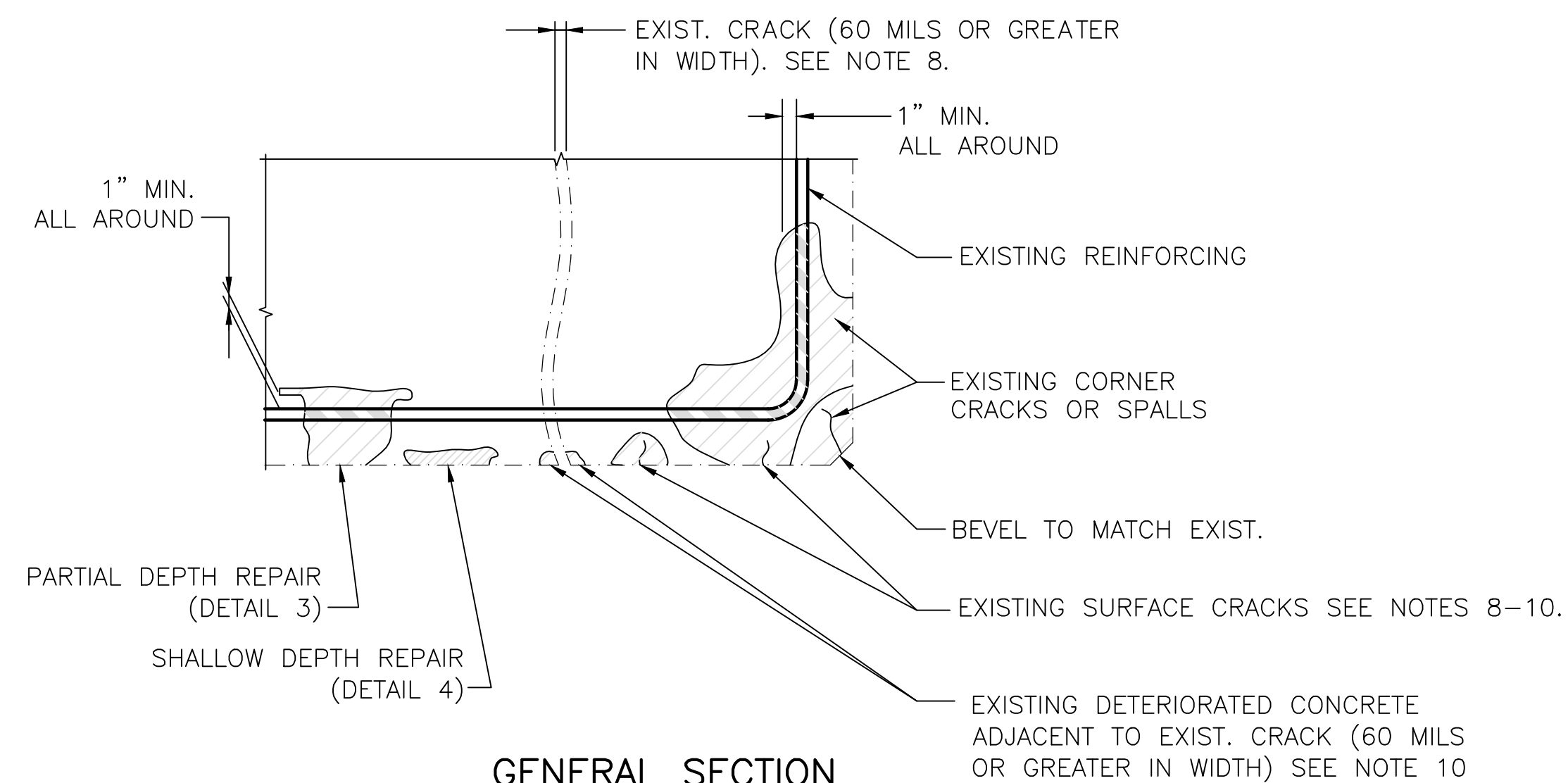
SCALE:	AS SHOWN
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FREEDOM STREET OVER MILL RIVER SIDEWALK DETAILS HOPEDALE, MASSACHUSETTS	
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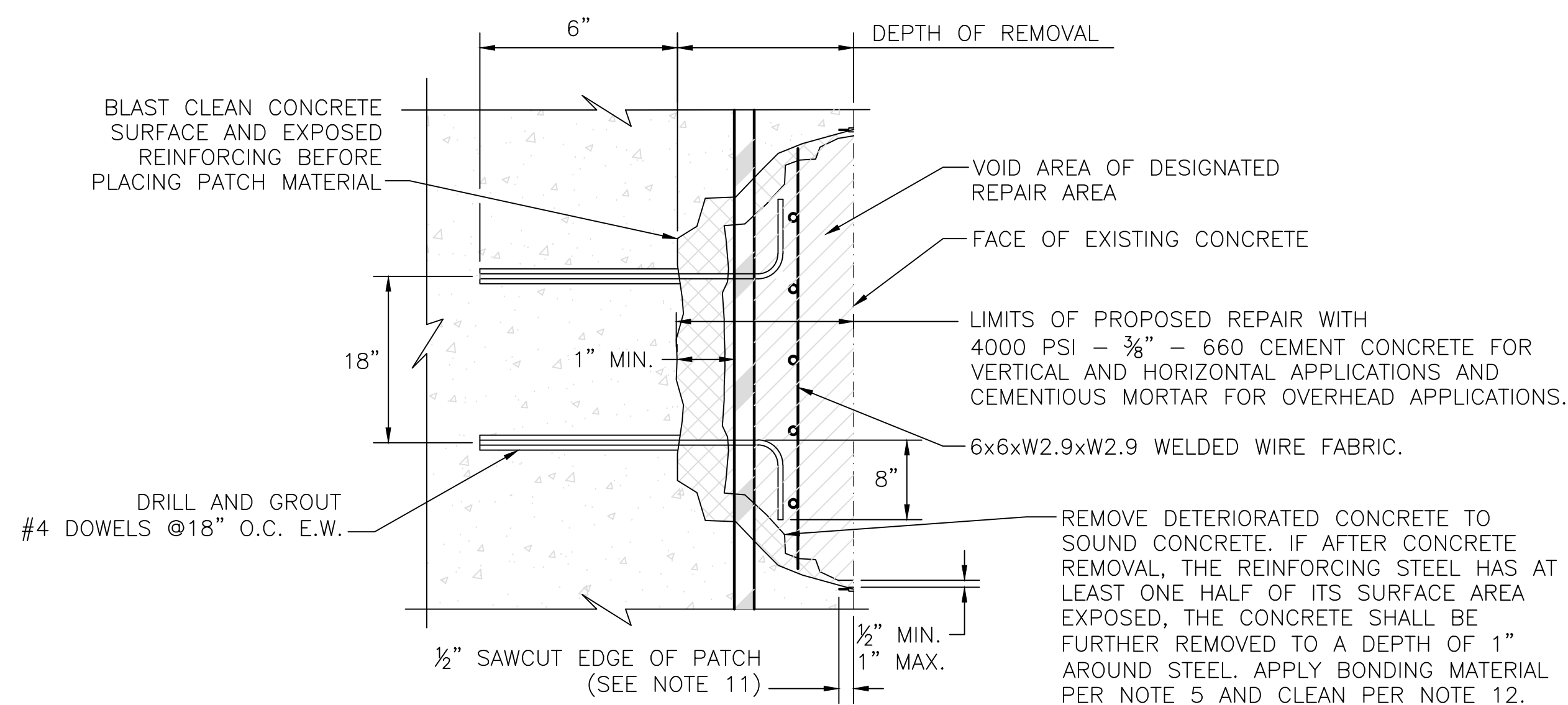
BETA JOB No.	5275
PLOT DATE:	7/12/2016 2:38 PM
ISSUE DATE	3/31/2016 11:38 AM
SHEET No.	10 OF 14
File:	Sheet_SidewalkDetails.dwg



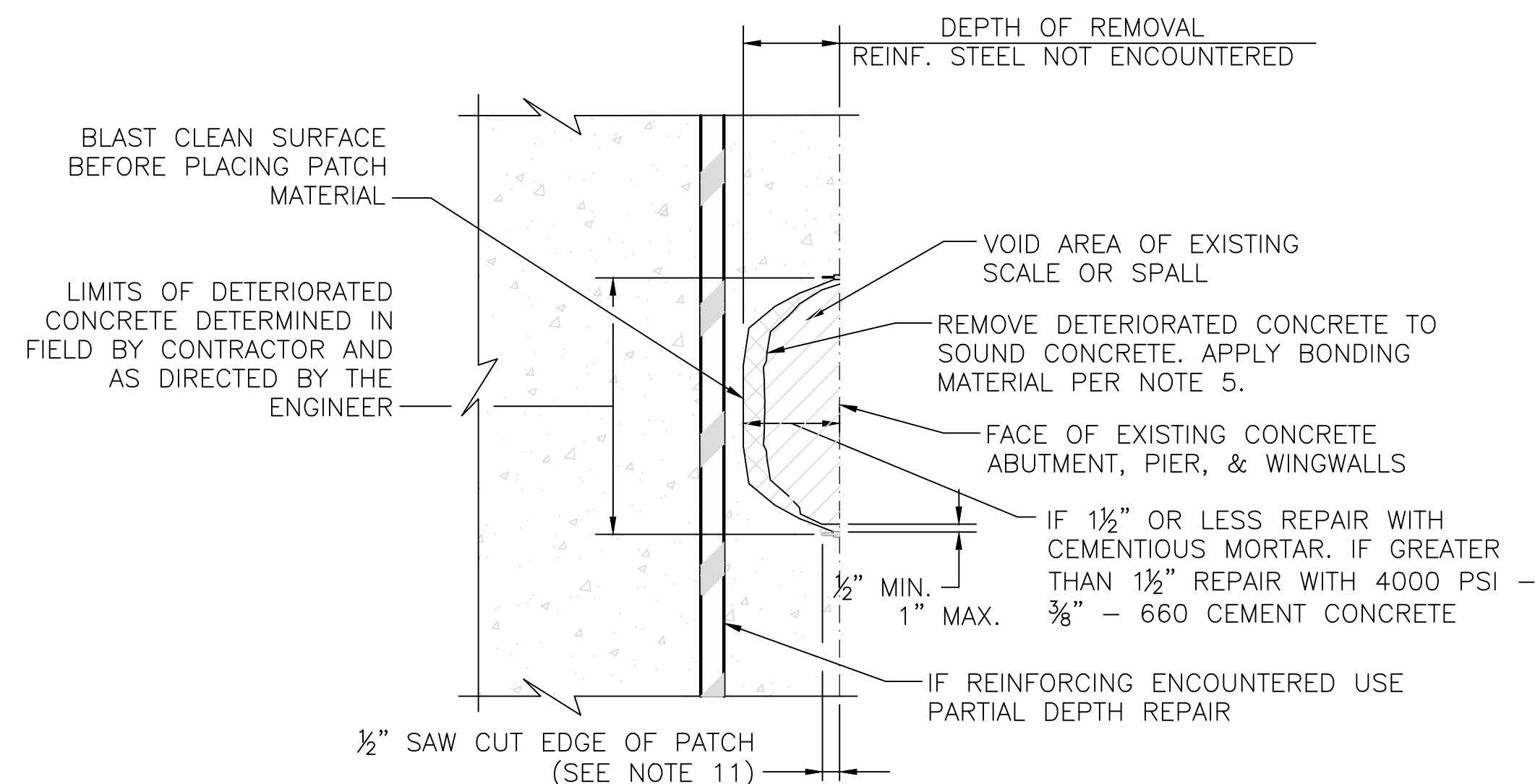
GENERAL ELEVATION
NOT TO SCALE



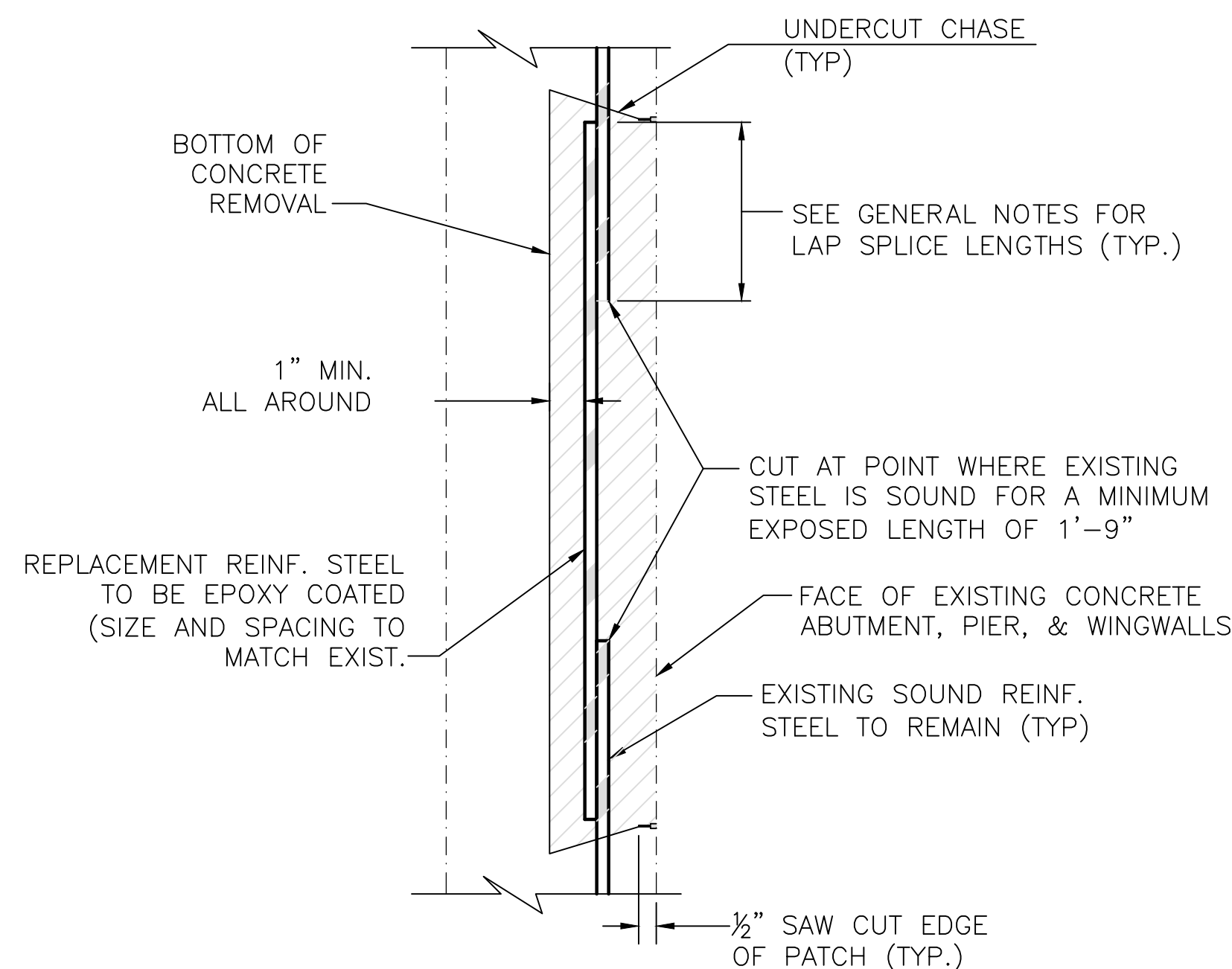
GENERAL SECTION
NOT TO SCALE



DETAIL 3: PARTIAL DEPTH SUBSTRUCTURE REPAIR
NOT TO SCALE



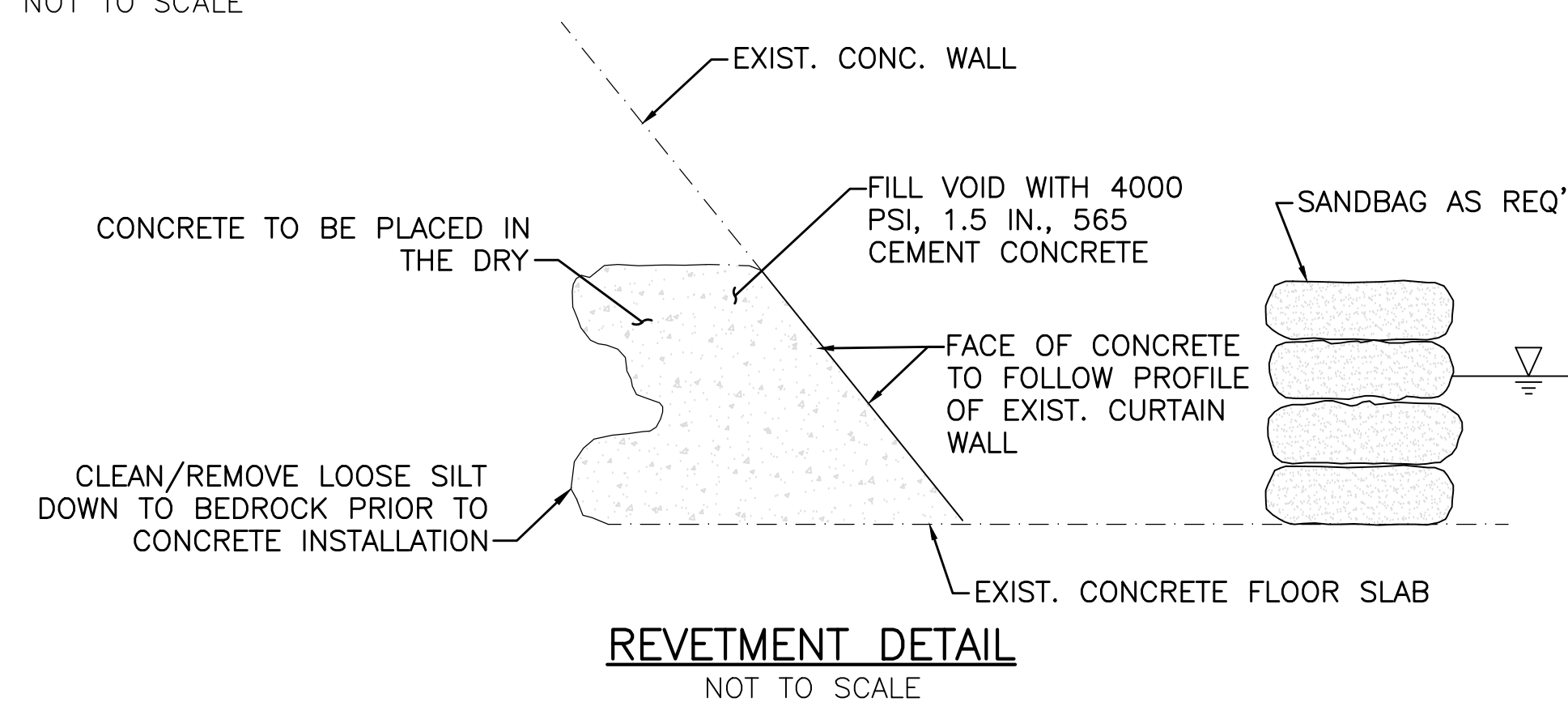
DETAIL 4: SHALLOW DEPTH SUBSTRUCTURE REPAIR
NOT TO SCALE



NOTES:

1. THIS DETAIL SHALL BE USED ONLY IF THE CONTRACTOR DAMAGES EXISTING REINFORCING TO THE EXTENT THAT THE REINFORCING REQUIRES REPLACEMENT.

REINFORCING REPLACEMENT
NOT TO SCALE






REVETMENT DETAIL
NOT TO SCALE

CONCRETE REPAIR NOTES:

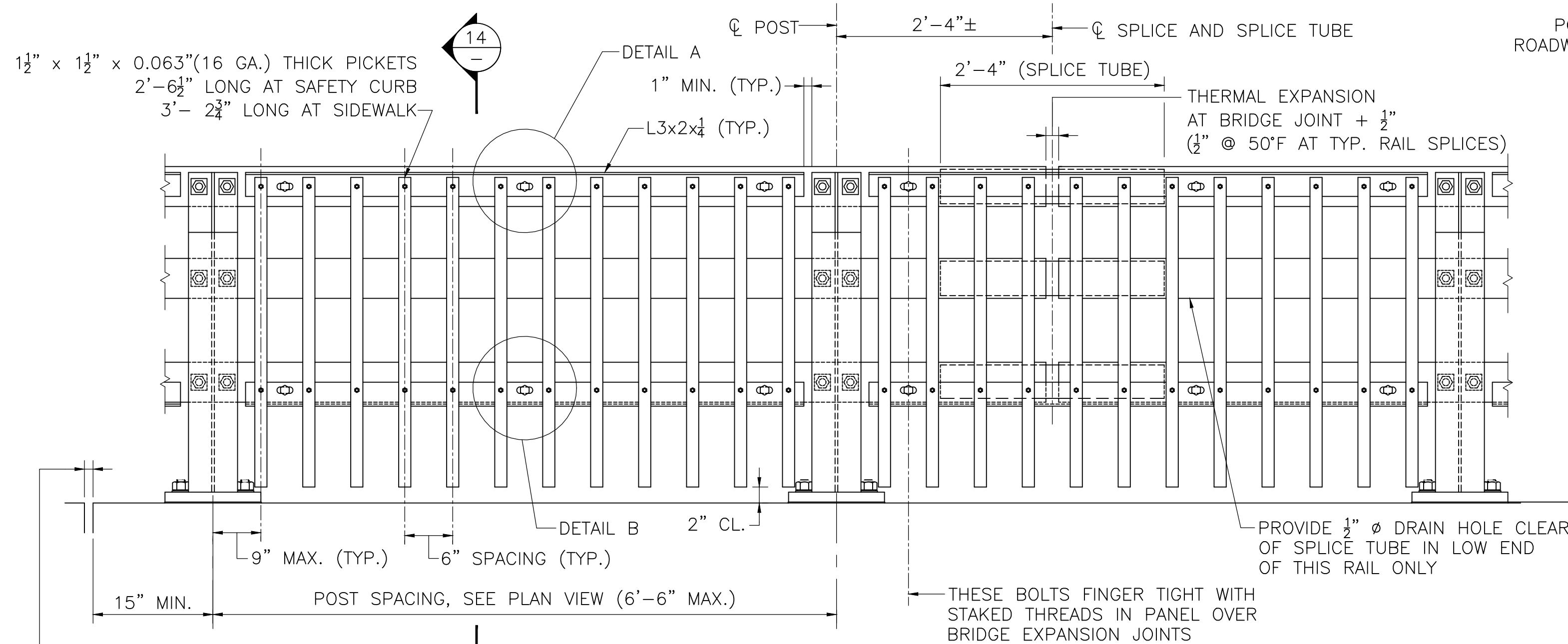
1. THE ACTUAL LOCATIONS AND EXTENT OF VARIOUS TYPES OF CONCRETE REPAIR WILL BE DETERMINED IN THE FIELD. THE CONTRACTOR SHALL REPAIR ALL AREAS DETERMINED NECESSARY AS DIRECTED BY THE ENGINEER AFTER THE CONTRACTOR HAS SOUNDED AND MARKED OUT ALL REPAIR AREAS.
2. AREAS REQUIRING REPAIRS THAT ARE GREATER THAN $\frac{1}{2}$ " DEEP SHALL BE REPAIRED USING 4000 PSI - $\frac{3}{8}$ " - 660 CEMENT CONCRETE. AREAS LESS THAN $\frac{1}{2}$ " DEEP SHALL BE REPAIRED USING CEMENTITIOUS MORTAR FOR PATCHING.
3. IF DURING REMOVAL OF DETERIORATED CONCRETE, THE CONTRACTOR DAMAGES EXISTING REINFORCEMENT TO THE EXTENT REQUIRING REPLACEMENT, ANY ADDITIONAL CONCRETE REMOVAL, PATCHING MATERIAL, CLEANING EXISTING REINFORCING STEEL, AND FURNISHING AND INSTALLING REPLACEMENT REINFORCING STEEL SHALL BE AT THE CONTRACTOR'S EXPENSE. INSTALL ACCORDING TO REINFORCING REPLACEMENT DETAIL ON THIS SHEET.
4. REINFORCEMENT, INCLUDING WELDED WIRE FABRIC, USED TO REPLACE EXISTING DETERIORATED REINFORCING STEEL (SECTION LOSS OF 15% OR MORE OF THE ORIGINAL CROSS SECTION, AS DETERMINED BY THE ENGINEER) SHALL BE EPOXY COATED. COST OF REPLACEMENT SHALL BE INCLUDED IN THE RESPECTIVE REPAIR ITEMS.
5. IMMEDIATELY PRIOR TO PLACING NEW CONCRETE OR MORTAR AGAINST EXISTING CONCRETE, CLEAN EXISTING SURFACES BY ABRASIVE BLASTING AND APPLY APPROVED BONDING COMPOUND IMMEDIATELY PRIOR TO PLACING CONCRETE.
6. ALL EXISTING SURFACES THAT WILL HAVE NEW CONCRETE CAST AGAINST IT MUST BE ROUGHENED TO A MINIMUM AMPLITUDE OF $\frac{1}{4}$ ".
7. CONCRETE REPAIR WORK INCLUDES REMOVING ALL DETERIORATED, LOOSE, SPALLED, POPCORNED AND MAP CRACKED CONCRETE (ITEM 127.12). CONCRETE WHICH HAS SPALLED OR OTHERWISE DETERIORATED ADJACENT TO SURFACE CRACK SHALL BE REPAIRED.
8. CRACKS THAT ARE 60 MILS OR GREATER IN WIDTH SHALL BE SEALED WITH A METHACRYLATE SEALER, A SILANE SEALER, OR EPOXY INJECTION. SEE SPECIAL PROVISIONS FOR ADDITIONAL GUIDELINES.
9. CRACKS THAT ARE LESS THAN 60 MILS IN WIDTH SHALL NOT BE REPAIRED UNLESS DIRECTED BY THE ENGINEER.
10. WHERE PATCHING AND CRACK SEALING WORK ARE ADJACENT, CRACK SEALING SHALL BE PERFORMED BEFORE PATCHING.
11. ALL DETERIORATED AREAS SHALL BE DELINEATED BY A $\frac{1}{2}$ " SAWCUT. THE COST OF SAWCUTTING SHALL BE INCLUDED UNDER ITEM 127.12.
12. ALL EXPOSED STEEL SHALL BE THOROUGHLY BLAST CLEANED TO A WHITE METAL FINISH AND COATED WITH EPOXY IN ACCORDANCE WITH AASHTO M284 (ASTM D3963). BLAST CLEANING AND EPOXY SHALL BE INCLUDED IN THE RESPECTIVE CONCRETE REPAIR ITEM.
13. ALL SURFACES SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH. NO ADDITIONAL MATERIAL SHALL BE ADDED TO CONCRETE.

LEGEND:

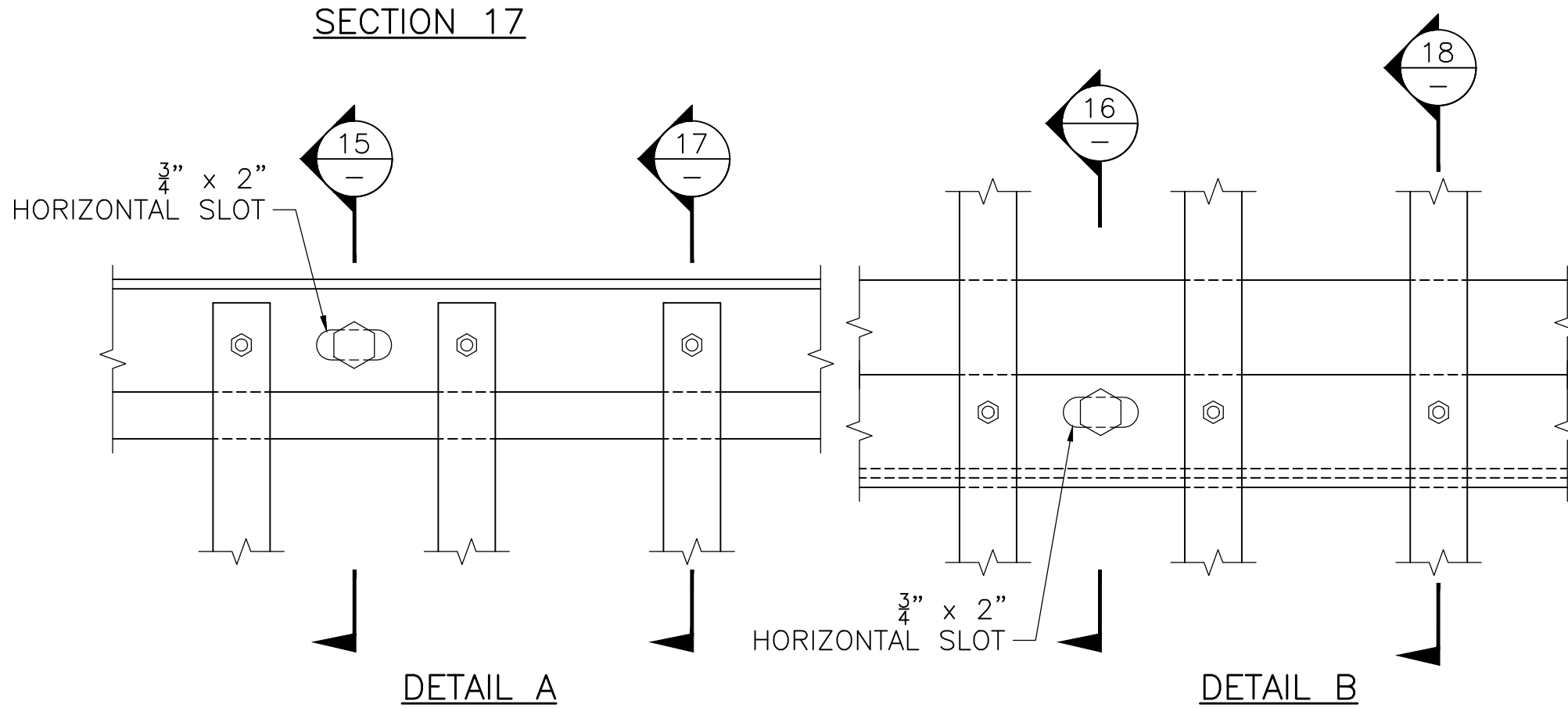
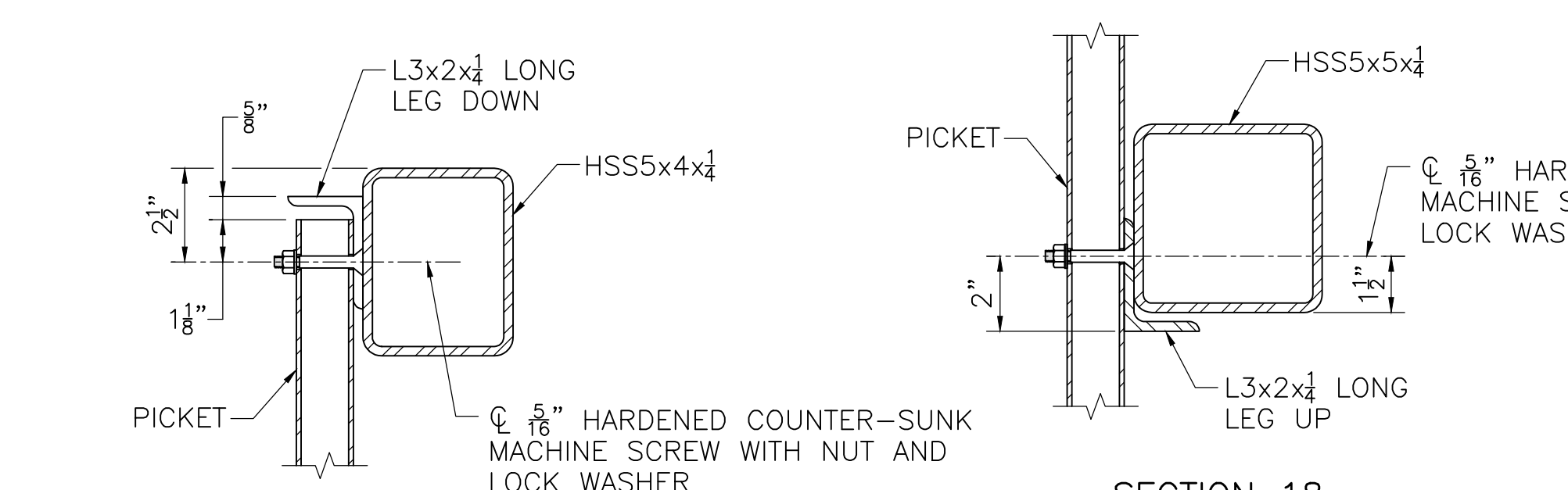
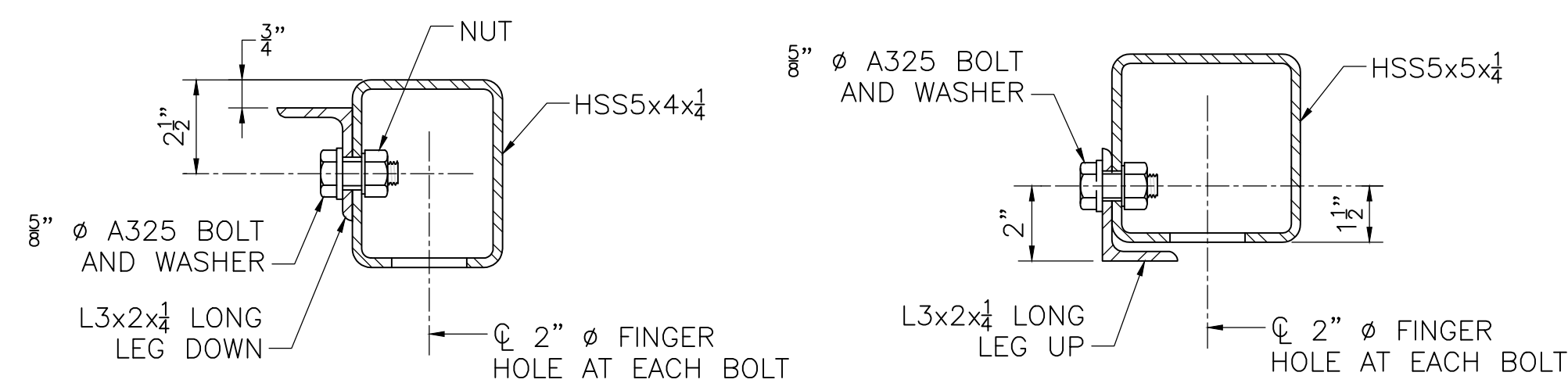
-  DETERIORATED CONCRETE TO BE REMOVED.
 REINFORCING STEEL.
 ADDITIONAL CONCRETE TO BE REMOVED.

						DRAWN BY:		PREPARED BY:	 www.BETA-Inc.com	SCALE: AS SHOWN	FREEDOM STREET OVER MILL RIVER CONCRETE REPAIR DETAILS HOPEDALE, MASSACHUSETTS	BETA JOB No. 5275
						DESIGNED BY:		PLOT DATE: 7/12/2016 2:38 PM				
						CHECKED BY:		ISSUE DATE: 3/31/2016 11:38 AM				
NUMBER	DATE	MADE BY	CHECKED BY	DESCRIPTION								SHEET No. 11 OF 14
REVISIONS												File: Sheet_ConcreteRepairs.dwg

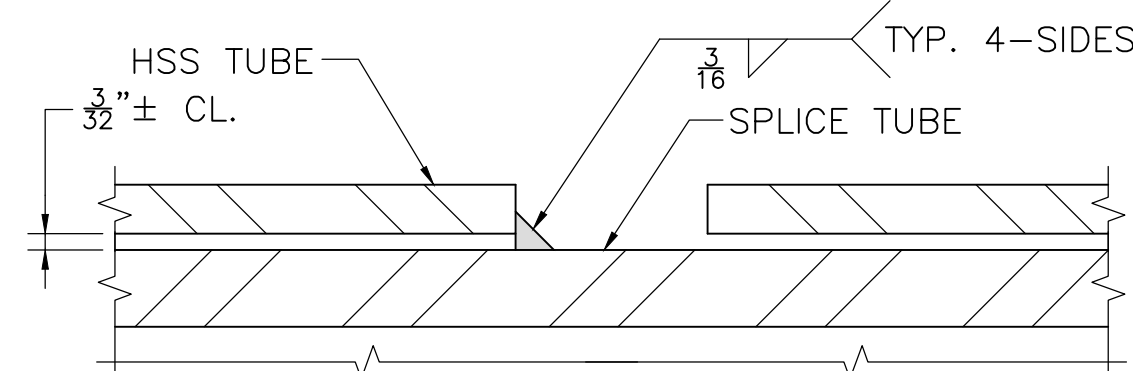
Q:\5200\S3-TL3- HOPEDALE - FREEDOM STREET BRIDGE\STRUCTURAL\--FINAL DESIGN--S3-TL4 METAL BRIDGE RAILING\DRAWING\S3-TL3.DWG



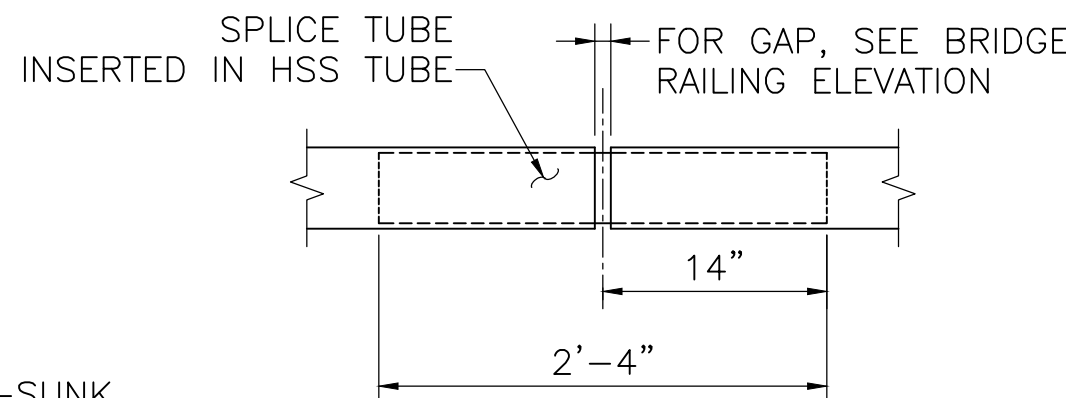
BRIDGE RAILING ELEVATION
SCALE: 1" = 1'-0"



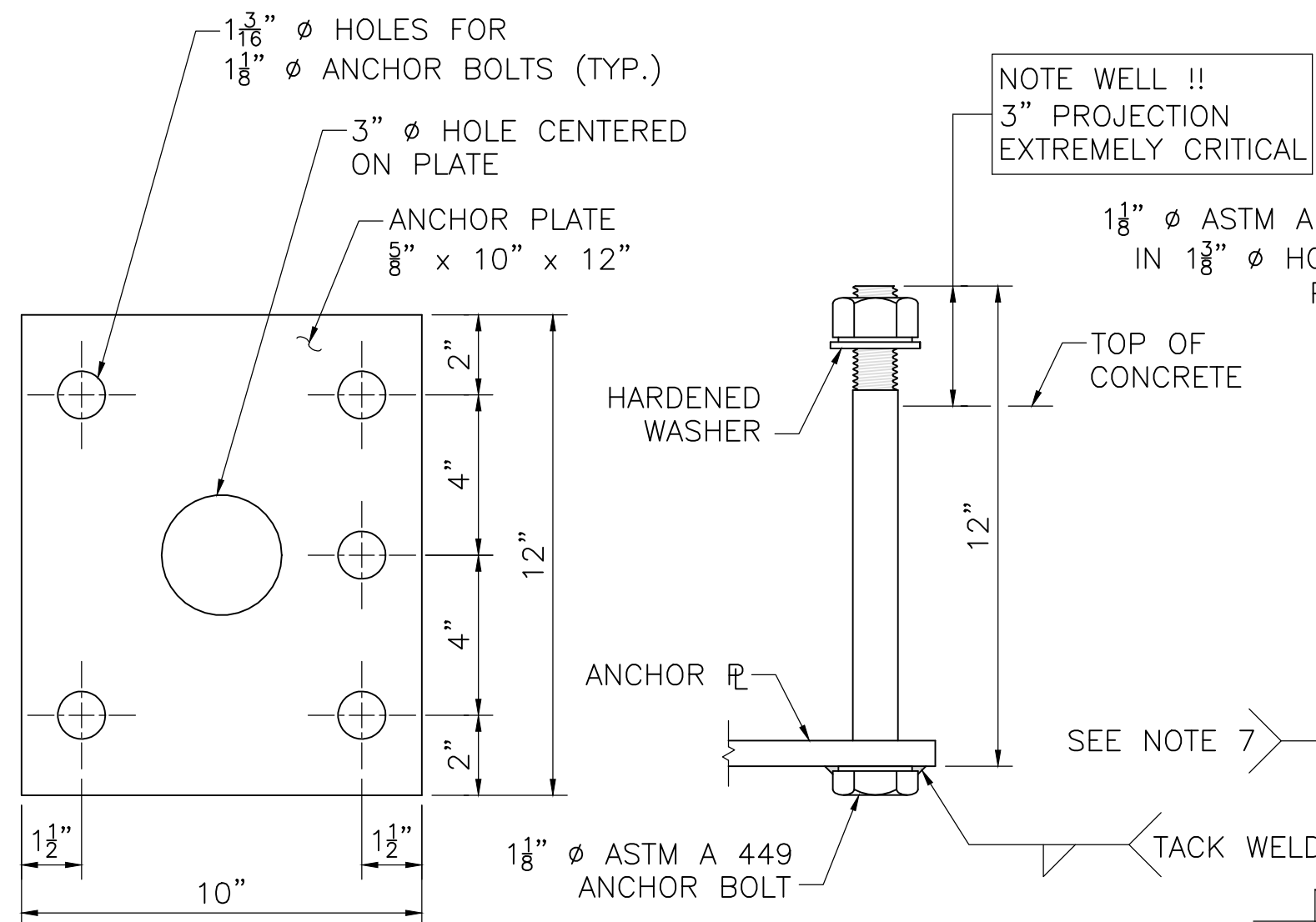
TYPICAL PICKET TO RAIL DETAILS
SCALE: 3" = 1'-0"



SPLICE DETAIL
FULL SIZE



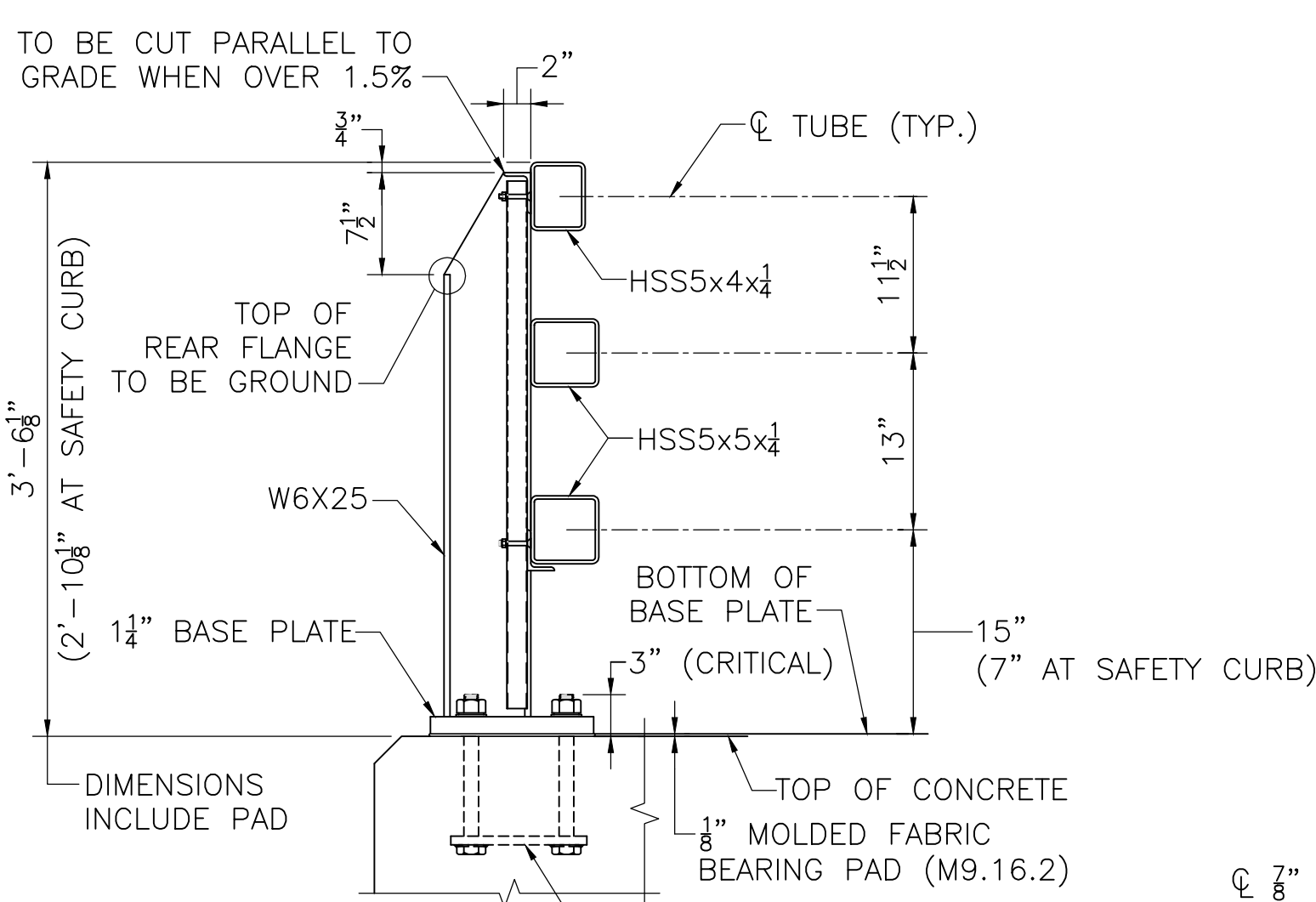
TYPICAL SPLICE
SCALE: 1" = 1'-0"



ANCHOR PLATE
SCALE: 3" = 1'-0"

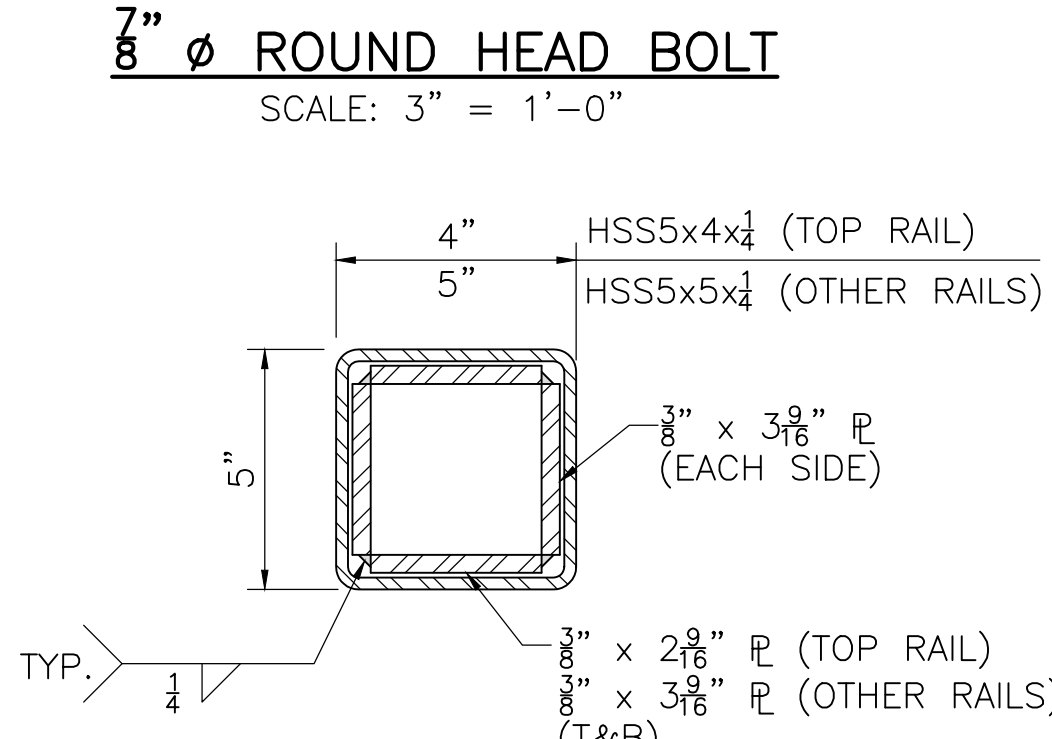
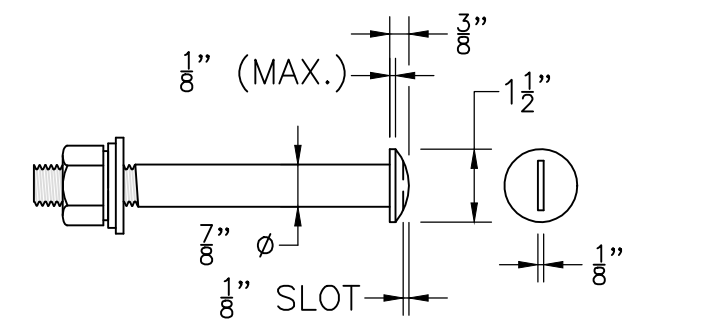
ANCHOR BOLT
SCALE: 3" = 1'-0"

S3-TL4 BRIDGE RAILING

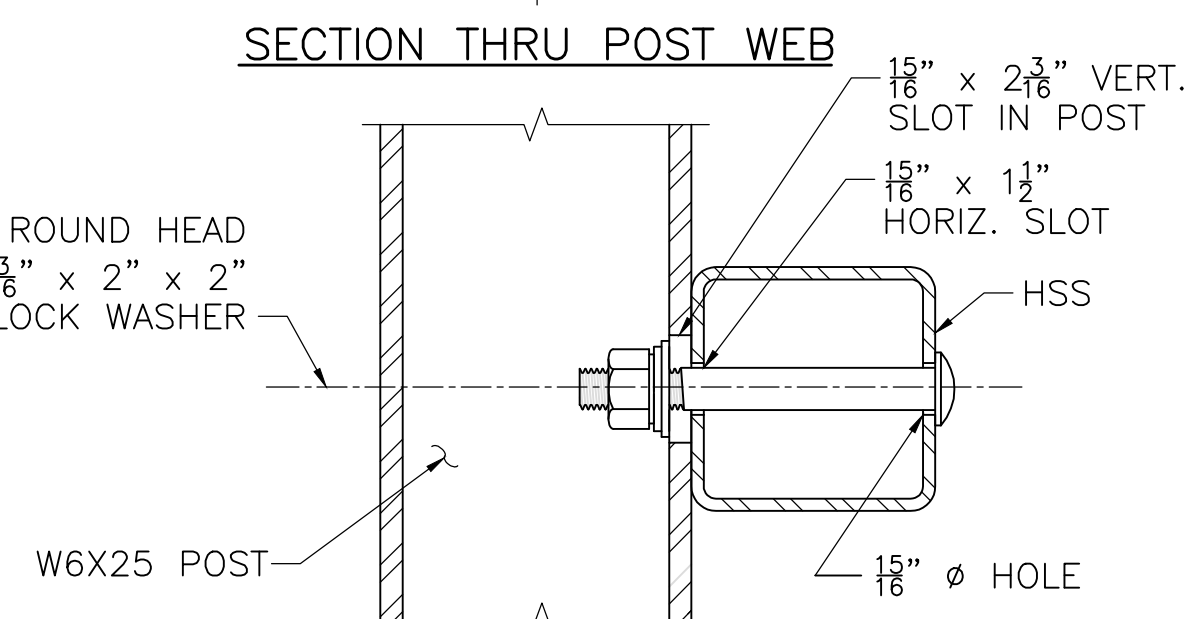
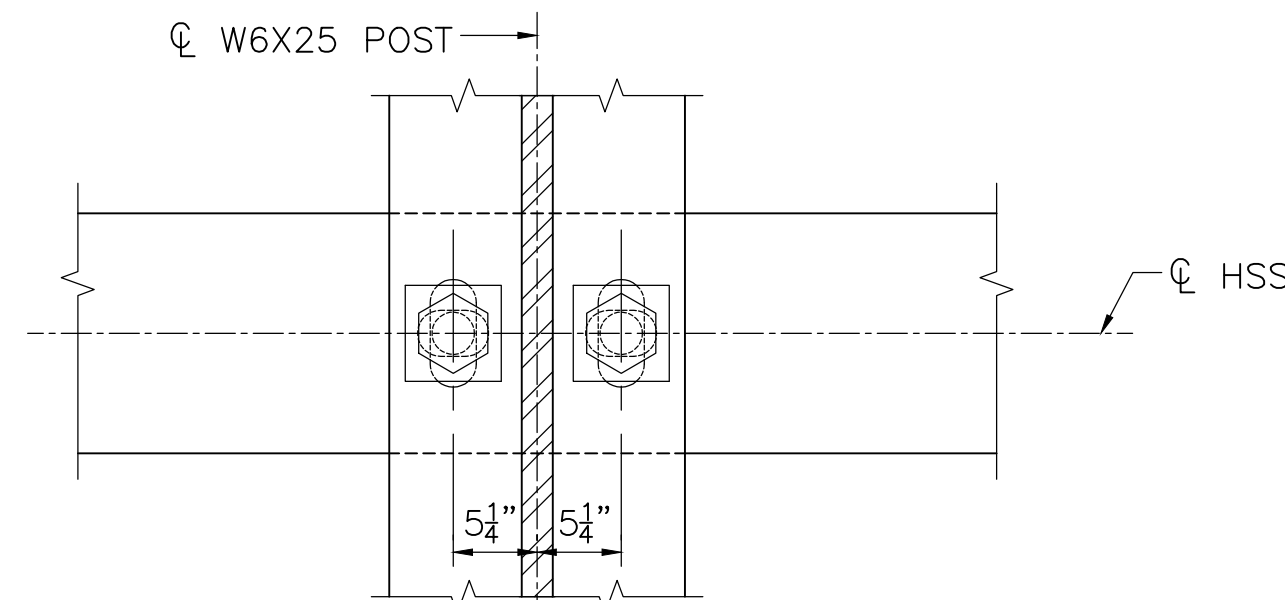


NOTE:
SECTION AT SIDEWALK SHOWN. SECTION AT SAFETY CURB SIMILAR, EXCEPT AS NOTED.

SECTION 14
SCALE: 1" = 1'-0"

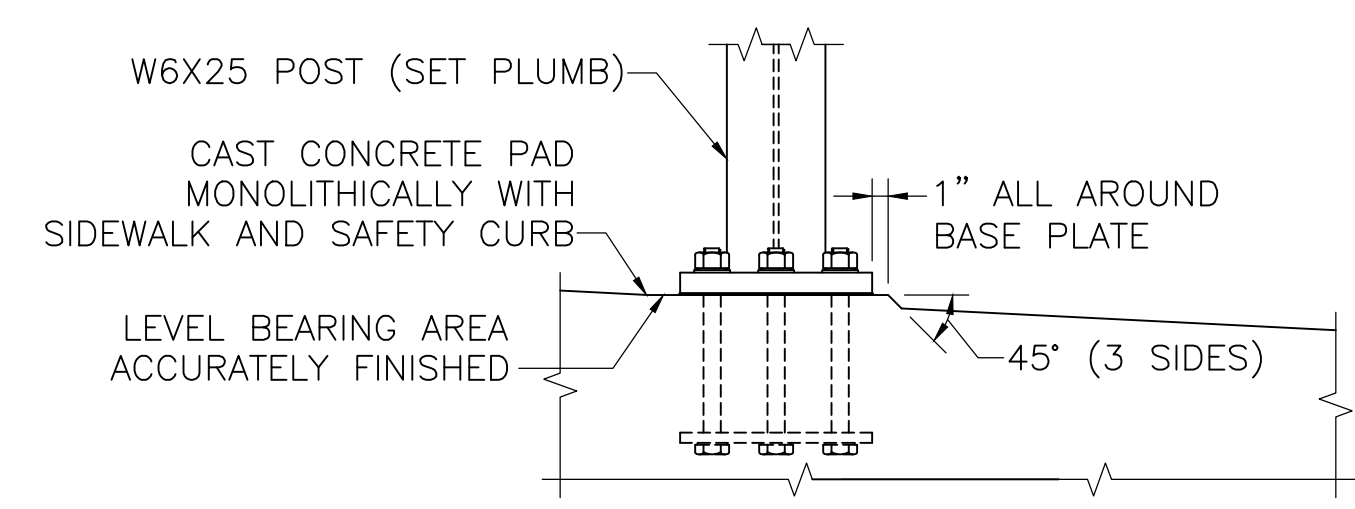


SPLICE TUBE DETAILS
SCALE: 3" = 1'-0"



NOTE:
CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS
SCALE: 1" = 1'-0"



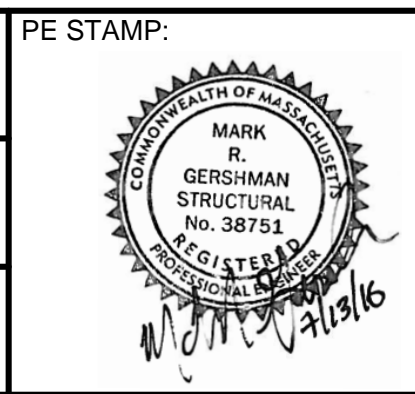
SETTING OF POSTS (PROFILE GRADE OVER 1.5%)
SCALE: 1" = 1'-0"

RAILING NOTES:

- RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING (HSS) SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500 WITH A CERTIFIED F_y = 50 KSI MINIMUM. THE MINIMUM HORIZONTAL BENDING RADII OF THE HSS TUBING SHALL BE 8 FEET. PICKET CARRIER ANGLES, ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 270 GRADE 36. PICKET TUBING SHALL CONFORM TO ASTM A 513 WITH F_y = 36 KSI MIN. OR A 500 GRADE B.
- ALL STEEL (EXCEPT THE 5/8" ANCHOR PLATE AND FASTENERS) SHALL BE GALVANIZED AND PAINTED DARK BRONZE (FEDERAL STD. 595B COLOR NO. 10045). ANCHOR PLATE SHALL BE GALVANIZED ONLY. HEADS OF 7/8" Ø ROUND HEAD BOLTS SHALL BE PAINTED TO MATCH RAIL.
- ANCHOR BOLTS SHALL BE SET WITH TEMPLATES. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN AFTER STEEL IS IN PLACE.
- RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR (4) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN THE PANELS OVER EXPANSION JOINT.
- ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
- ALL POSTS TO BE PLUMB WHEN PROFILE GRADE EXCEEDS 1.5%. FOR PROFILE GRADES LESS THAN 1.5%, POSTS SHALL BE SET PERPENDICULAR TO GRADE.
- POST FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING. WELD SHALL BE BACK-GOUGED ON BACK SIDE EXCEPT AT WEB. WELD IS THE SAME ON BOTH FLANGES.
- 7/8" Ø ROUND HEAD BOLTS SHALL CONFORM TO THE CHEMICAL AND PHYSICAL REQUIREMENTS OF AASHTO M 164.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	DESCRIPTION

DRAWN BY:	
DESIGNED BY:	
CHECKED BY:	



PREPARED BY:	
SCALE:	AS SHOWN

SCALE:	AS SHOWN
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FREEDOM STREET OVER MILL RIVER S3-TL3 BRIDGE RAILING HOPEDALE, MASSACHUSETTS	
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BETA JOB No.	5275
PLOT DATE:	7/12/2016 2:38 PM
ISSUE DATE	3/31/2016 11:38 AM
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NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS.
2. ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, AND REFLECTORIZED PLASTIC DRUMS WITH LIGHTING DEVICES MOUNTED ON THEM, MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES."
6. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS.
7. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
8. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
9. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS. BREAKAWAY WOOD POSTS SHALL BE ACCEPTABLE IN PLACE OF P-5 POSTS AS DIRECTED BY THE ENGINEER.
10. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL NOT COVERED IN THE PLAN SHALL REFER TO MASSDOT "STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TRAFFIC MANAGEMENT PLANS".



LEGEND:


- REFLECTORIZED PLASTIC DRUM


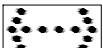
▨ WORK ZONE


 WORK VEHICLE
- P POLICE DETAIL



➔ DIRECTION OF TRAFFIC


 TRUCK MOUNTED ATTENUATOR
-  TYPE III BARRICADE

 IMPACT ATTENUATOR

 TRAFFIC OR PEDESTRIAN SIGNAL
-  FLASHING ARROW PANEL











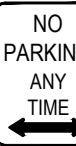

 MEDIAN BARRIER

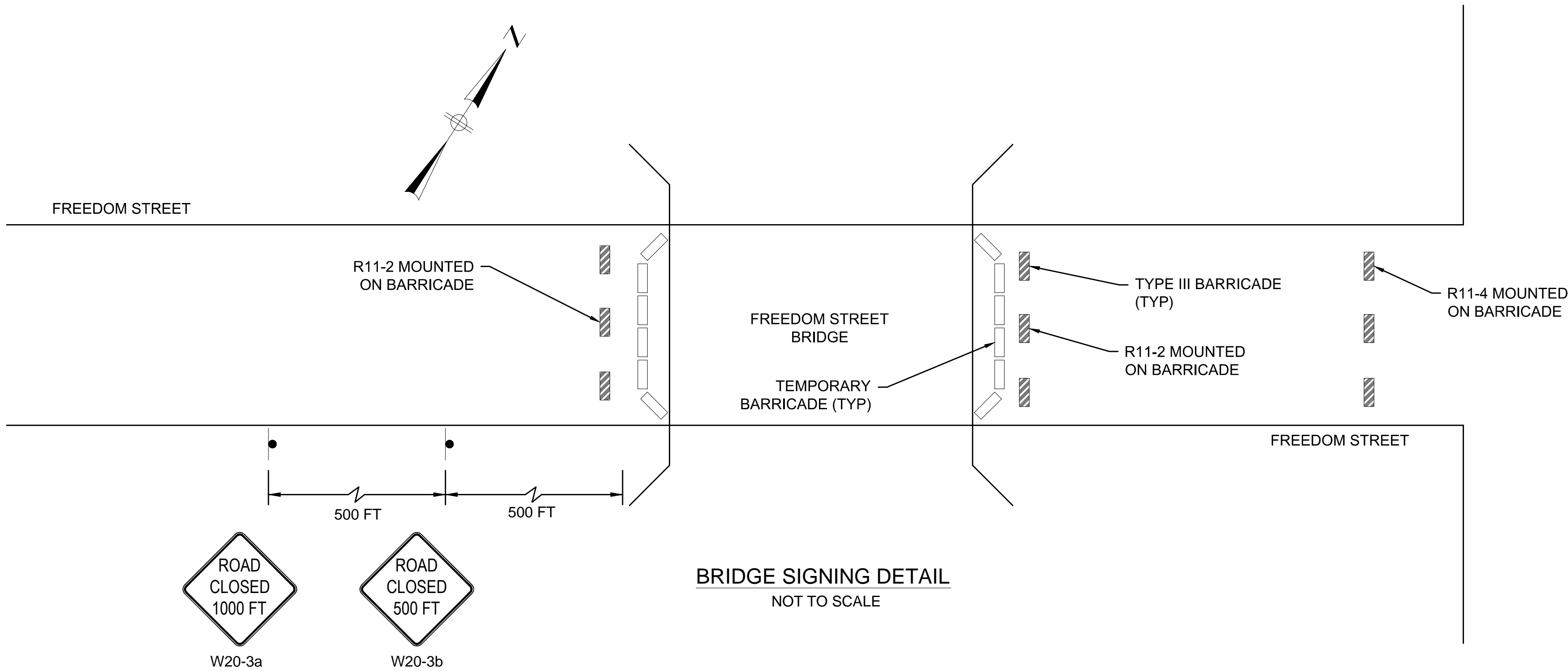
 SIGN
-  FLASHING ARROW PANEL

 MEDIAN BARRIER WITH WARNING LIGHTS

F FLAGGER


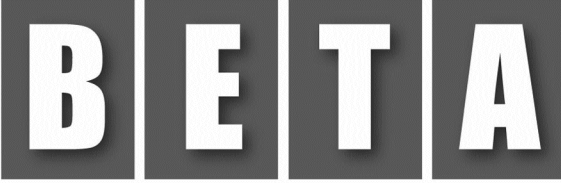
DETOUR SIGNING

IDENTIFI- CATION NUMBER	SIZE OF SIGN		TEXT	DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW		BACK- GROUND	LEGEND	BORDER			
R11-2	48 in	30 in		SEE 2009 MUTCD STANDARDS			2	WHITE	BLACK	BLACK	MOUNT ON BARRICADE	10.0	20.0
R11-3a	60 in	30 in					1	WHITE	BLACK	BLACK	P-5 (2) 1	12.5	12.5
R11-4	60 in	30 in					2	WHITE	BLACK	BLACK	MOUNT ON BARRICADE	12.5	25.0
W20-3a	36 in	36 in					1	ORANGE	BLACK	BLACK	P-5 1	9.0	9.0
W20-3b	36 in	36 in					1	ORANGE	BLACK	BLACK	P-5 1	9.0	9.0
M4-8a	24 in	18 in					2	ORANGE	BLACK	BLACK	P-5 2	3.0	6.0
M4-9L	30 in	24 in					5	ORANGE	BLACK	BLACK	P-5 5	5.0	25.0
M4-9R	30 in	24 in					6	ORANGE	BLACK	BLACK	P-5 6	5.0	30.0
M4-9SR	30 in	24 in					3	ORANGE	BLACK	BLACK	P-5 3	5.0	15.0
M4-9V	30 in	24 in					4	ORANGE	BLACK	BLACK	P-5 4	5.0	20.0
R7-1	12 in	18 in		SEE 2009 MUTCD STANDARDS			7	WHITE	RED	RED	P-5 7	1.5	10.5
SP-1	60 in	30 in					7	ORANGE	BLACK	BLACK	P-5 (2) 7	12.5	87.5



HOPEDALE STREET

FREEDOM STREET

						DRAWN BY: GL	PE STAMP: 	PREPARED BY:  www.BETA-inc.com	SCALE: AS SHOWN	FREEDOM STREET OVER MILL RIVER DETOUR PLAN (1OF 2) HOPEDALE, MASSACHUSETTS		BETA JOB No. 5275
						DESIGNED BY: GL						PLOT DATE: 7/12/2016 2:38 PM
						CHECKED BY: MG						ISSUE DATE: 6/17/2016 2:17 PM
NUMBER	DATE	MADE BY	CHECKED BY		DESCRIPTION							SHEET No. 13 OF 14
REVISIONS												File: 5275 Detour.dwg


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NUMBER	DATE	MADE BY	CHECKED BY	DESCRIPTION
REVISIONS				

DRAWN BY:	GL
DESIGNED BY:	GL
CHECKED BY:	MG

PE STAMP:



PREPARED BY:


www.BETA-inc.com

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SCALE:
AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

FREEDOM STREET
OVER MILL RIVER
DETOUR PLAN (2 OF 2)
HOPEDALE, MASSACHUSETTS

BETA JOB No.	5275
PLOT DATE:	7/12/2016 2:38 PM
ISSUE DATE	6/17/2016 2:17 PM
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